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*The commerce and navigation  
of the ancients in the Indian Ocean*

William Vincent, Samuel Horsley, William Wales



Ya 115.116

























*William Vincent D.D.  
Dean of Westminster.*

THE  
COMMERCE  
AND  
NAVIGATION  
OF  
*THE ANCIENTS*  
IN  
THE INDIAN OCEAN.

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*By WILLIAM VINCENT, D.D.*  
DEAN OF WESTMINSTER.

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IN TWO VOLUMES.

VOL. I.

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*o*

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*C. Turner fecit.*

APERIAM TERRAS GENTIBUS.



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*Published Jan<sup>r</sup> 14. 1797. by D. Vincent.*

THE  
VOYAGE OF NEARCHUS  
*FROM THE INDUS TO THE EUPHRATES.*

COLLECTED FROM THE  
ORIGINAL JOURNAL PRESERVED BY ARRIAN,

AND ILLUSTRATED BY  
AUTHORITIES ANCIENT AND MODERN;

CONTAINING  
AN ACCOUNT OF THE FIRST NAVIGATION ATTEMPTED BY  
EUROPEANS IN THE INDIAN OCEAN.

TO WHICH ARE ADDED,  
*THREE DISSERTATIONS:*

Two, on the ACRONYCHAL RISING of the PLEIADES,  
By the Right Reverend Dr. SAMUEL HORSLEY, Lord Bishop of Rochester;  
And by Mr. WILLIAM WALES, Master of the Royal Mathematical School in Christ's Hospital:

And ONE by M. DE LA ROCLETTE,  
On the FIRST MERIDIAN of PTOLEMY.

Posteris an aliqua cura nostri, nescio, nos certè meremur ut sit aliqua, non dico ingenio  
(id enim superbum) sed studio, sed labore, et reverentiâ posterorum.

PLINIUS, TACITO. Lib. ix. Ep. 14.





TO THE RIGHT HONOURABLE

LORD VISCOUNT SIDMOUTH.

MY LORD,

UNSUPPORTED by powerful connexions, and unknown as I was to your Lordship, but by my literary labours and my public situation, you were pleased to honour me with your patronage, and to deem me worthy of advancement in my profession.

To have obtained the object of my ambition without solicitation, was a satisfaction without alloy. Such I felt it at the moment, and such I feel it after the experience of possession ; but to testify my sense of the

obligation, requires higher powers of expression than I am able to command. If words are wanting, I persuade myself that your Lordship will accept this public acknowledgment as a memorial of my gratitude, and receive the following Work into your protection, as a farther testimony of your regard for the Author.

It is a Work, my Lord, addressed to no Patron in the first instance, because, conscious however I might be, that it had been prepared by the labour of many years, and conducted with the utmost exertion of my abilities, I was still doubtful of my powers to render it such an offering as should be worthy of acceptance. But it is now revised and cleared of every error which I have discovered, and completed under a conjuncture of favourable circumstances, which I could neither calculate nor foresee. It has been styled, indeed, a Disquisition rather curious

than useful ; but it contains the investigation of a subject which concerns the general interests of mankind, and developes the origin of that commerce, which, under Providence, has enabled our country to survive a contest that has been fatal to the liberties of Europe.

These considerations are sufficient to recommend it to the Friend of Literature, and the Statesman ; and in confidence of this presumption, I have the honour to subscribe myself

YOUR LORDSHIP'S

Most obliged

and most faithful Servant,

JULY 1, 1807.

WILLIAM VINCENT.



# P R E F A C E

TO THE

F I R S T E D I T I O N .

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**I**T is the privilege of an Author to avail himself of a Preface, in order to announce his design, to acknowledge obligations, and to anticipate objections.

I. On the first head, however, I shall be silent, the Work must speak for itself; and in the expression of my gratitude I shall confine myself, except in one instance, to personal communications; for all that is published is free ground, and to use it fairly is the best acknowledgment.

II. To Dr. Horsley, Bishop of Rochester, and to Mr. Wales, the companion of Cook, I am indebted for two Dissertations (which would do honour to any work) upon one of the most intricate questions of Chronology; and to Mr. de la Rochette for the solution of a geographical difficulty of no small importance. Dr. Russell, the historian of Aleppo, was my adviser in the few attempts I have made upon Arabic etymology, and con-

ferred a still greater favour by introducing me to a correspondence with Mr. Niebuhr, the best of modern travellers surviving. The information I received from him, indeed, related more immediately to another object than the one before us; but as a future opportunity may not offer, I seize the present with avidity to own my obligations. By Mr. Bryant I was favoured with a map which I could not otherwise have procured; and to Mr. Marsden, the historian of Sumatra, I am indebted for an introduction to Mr. Dalrymple.

Such are the favours I have received from literary friends, but to the Gentlemen in the service of the East India Company I have obligations of a different kind.

Major Rennell's Memoirs I have consulted upon all occasions, and if I have not profited by personal intercourse, the fault is mine. His civilities will not be erased from my mind; but I found that he was engaged in some geographical researches that interfered with a part of my own, and I held it neither just or honourable to ask for information upon a subject that he had already occupied. I have now only to hope that the result of our separate inquiries may essentially correspond<sup>\*</sup>, as, in

<sup>\*</sup> Upon the publication of Major Rennell's Geography of Herodotus in 1800, the chief difference between his account and mine consisted in the length of the stadium, and the situation of Susa; both which subjects the reader will find stated in their proper place.

case of disagreement, his reputation as a geographer is established, and mine is only an expectancy.

From Mr. Jones, Resident for the Company at Busheer and Basra, I obtained much information in the space of a short interview ; but he left London before I could prosecute my inquiries, and much to my regret ; as I had promised myself great advantage from his intimate knowledge of the country and the language, and his intercourse with the people in power ; circumstances which qualify him to give a better account of the present state of Persia than almost any other visitor of the East.

But Mr. Dalrymple demands the utmost tribute of my gratitude. I have had access to his whole collection published and unpublished, and his advice upon every question of doubt or difficulty. Two charts, composed under his direction, accompany the Voyage of Nearchus ; and as one of them comprehends a part of the coast which, without his assistance, was inexplicable, a short account of the survey on which it is founded cannot be unacceptable.

In the year 1774, a little squadron was equipped at Bombay for the purpose of exploring the coast between the Indus and the Gulph of Persia. It consisted of the following vessels :



Fox, Lieutenant Robinson, Commodore.

Dolphin, Lieutenant Porter.

A Patamar boat, in which Mr. Blair and Mr. Mascall, volunteers, were occasionally employed.

From the materials collected by these officers, Mr. Dalrymple constructed a chart, containing the Survey of Lieutenant Robinson, and accompanied it with a Memoir drawn up by Lieutenant Porter, which he prefaces with the following observation :

“ The coasts here described are so little known, that every particular must be acceptable, *as we have scarcely any account of them* since the time of Alexander the Great.”

So perfectly true have I found this, that there is no one Author I have consulted whose relation is intelligible without the assistance of this Memoir ; and if the Journal of Nearchus can now be presented to the Public with any degree of perspicuity, or any hope of affording pleasure, it is due to the liberal spirit of the East India Company, to the Presidency at Bombay, to the ability of the officers employed upon the service, and to the use Mr. Dalrymple has made of their information.

Commodore Robinson is still living, and has favoured me with an interview, in which many of my difficulties were removed.

Captain Blair has in some measure assisted me in tracing the whole coast of Mekran which I describe, and, with a liberality congenial to his profession, has favoured me with a sketch of the coast at Cape Jask, which solves a geographical question left in obscurity by the ancient writers; and, previously to this attempt, undecided by the moderns<sup>2</sup>.

The second chart, containing the Gulph of Persia, was of less difficult construction, from the ample supply of modern information in the possession of Mr. Dalrymple; but his chief reliance is fixed upon Lieutenant M'Cluer<sup>3</sup>, another officer in the service of the East India Company, and whom he regards as a navigator of extraordinary merit and abilities. The lower part of the gulph and the islands in it, as to their general position

<sup>2</sup> Much will be said in the following Work upon the authenticity of the Journal; but the highest testimony in its favour I received from this Gentleman. He questioned me how the fleet found a supply of water; and never shall I forget his surprise when I answered, "in the same manner, Sir, as you did, by opening pits upon the beach."

<sup>3</sup> The chart of the Gulph of Persia, by Lieutenant M'Cluer, was *not a public survey*, but the meritorious operation of an *individual*

during the moments he could allot without neglect of the common duties of an officer in the different vessels in which he served. It shews how much may be done in common voyages where diligence and ability are not wanting. Lieutenant M'Cluer had adopted a wild scheme of passing his days at the Pelew Islands, but has now abandoned it, and the Public may still hope for much nautical service from him.—NOTE by Mr. DALRYMPLE.

and bearings, have long been arranged, though perhaps with an inferior degree of accuracy; but the mouths of the Euphrates and the Tigris have never been so perfectly delineated, as by the hand of Mr. Dalrymple. Mr. d'Anville has laboured this point in an express Memoir upon the subject, to the full extent of that geographical learning of which he was so eminently possessed; but he had not the means of information, nor access to those sources which enabled Mr. Dalrymple to construct his chart. At the head of the gulph, and in the disposition of the channels of the Euphrâtes, Tigris, and Eulêus, Mr. d'Anville has been misled, from want of materials which have since been supplied by the publications of Niebuhr, and the investigation of our English navigators. To their labours Mr. Dalrymple is indebted for his singular accuracy, and I have had the satisfaction to find that Arrian is more consistent in proportion to every new light that has been obtained upon the subject.

III. With such assistance from others, more perhaps will be expected in the following Work than will be found. To this I have only to plead, that the utmost diligence has been exerted, and the greatest attention has been paid to every source of information which I could discover; nor am I sensible of neglecting any, unless something should lie concealed in the early accounts of the

Portuguese<sup>4</sup> upon their first arrival in India, but their language I do not understand, and the manuscript of Ressende in the British Museum is hardly legible, except to a native. I collected some positions from the charts and drawings in that Work, in which the coast of Mekran is better laid down than in any I have seen previous to Commodore Robinson's Survey. The Portuguese had a settlement at Guadel, and one or two others on the coast. Some of their accounts in Latin I have searched in vain; and Osorius, whom Dr. Robertson quotes with respect, I examined, but found his period was too early to avail me.

Some apology is requisite for the other Maps I have introduced. They are compiled from d'Anville, Rennell, and Dalrymple; but they are the effort of one who never composed a Map before. The use of them is to connect the motions of the army with those of the fleet, and to explain the geography of Arrian; but the

<sup>4</sup> A few names occur in de Barros Ramusio's Collection, tom. i. p. 388; and I have likewise examined the English translations of Manuel de Faria y Sousa (1695), and of Hernan Lopes de Castaneda (1582), with little success. Sousa mentions Ressende, vol. ii. p. 294. and the plundering of Guadel by the Portuguese, p. 373. It appears from another part of this work also, vol. iii. p. 416. that the coast of Guadel and Sinde were a part of the Portuguese settlements. Texeira I have not met with in English, though I am told there is a translation of his work. *N. B.* This translation I have since found under the title of Captain Stevens's History of Persia. This history is from Texeira, and Texeira's is from Mirkhond and Turun Sha, king of Ormus.

introduction of them might have been spared, if I could have procured a small sheet Map of Mr. de la Rochette's, comprising all the conquests of Alexander. That, however, I was forced to decline, as the price exceeded my abilities.

I foresee likewise, that exception may be taken to the quantity of introductory matter, and to a variety of digressions and interruptions which will occur; but for these I offer no apology. My purpose was not to translate Arrian, but to make him intelligible to an English reader, and to investigate a variety of subjects, historical, geographical; and commercial. The narrative has never yet been exhibited in a perspicuous form; and even Dr. Campbell<sup>s</sup>, in his account of this Voyage, though he is the only writer who has comprehended the views and designs of Alexander, has, almost equally with his predecessors, neglected the reduction of ancient geography to the standard of modern information. I may perhaps have descended too much into minuteness on this subject, but I cannot repent it; my duty was to explain my author, and I wished to have the site of Kalama fixed as decidedly as that of Alexandria.

<sup>s</sup> In Harris's Collection, vol. i. p. 400.

To a modern navigator I may appear to have disfigured my charts with ancient names, but I have not omitted the modern ones, nor neglected to mark the longitude and latitude of any cape or island of importance, from the latest observations; and much disappointment should I feel, if the critical inquiries which occur, should render the Work unacceptable to any intelligent officer who may hereafter visit these coasts. Every deduction made in the closet from a comparative view of former writers, ought to be subject to inquiries upon the spot. These I court, rather than decline; and if any navigator should make this Work the companion of his voyage, I shall be ready to retract any opinion, or correct any mistake, upon better information. Geography, of all sciences, profits most by the correction of errors.

The orthography I have adopted will be liable to the objections both of literary and nautical readers; I have only to request that it may not be imputed to a love of singularity or affectation, but to principle; for I have discovered several relations by contemplating the native sounds of Greek orthography, and many more I am persuaded will occur to those who pursue their inquiries in the country. I write, for instance, Killoota, not Cilluta, because the latter comes to our ear, Silleuta; and

the former is the true sound to the ear of a Greek. In modern names also I write Phoregh, and not Fohreggh; because the Ph preserves the relation of Phooreh with Poora, which Arrian makes the capital of Gadrosia. In comparing Oriental names with European orthography, I wish every inquirer to notice, that B. G. D. K. P. T<sup>6</sup>. have the aspirate added to them by a point as ב. B. בּ BH. and the same distinction is made by a diacritical point in many Eastern languages, as well as in the Hebrew. A minute attention to this has led me to more discoveries than one.

In writing names familiar in our English charts, I prefer the most popular, but generally notice the variation either on the first mention of it, or occasionally as the usage of it occurs. Thus I adopt Busheer and Bombareek, as known to every English navigator, rather than Abuschæhr and Cohum-barick<sup>7</sup>, which Niebuhr pronounces to be the Oriental orthography. I agree, however, most cordially with Mr. Dalrymple, in allowing that every variation should be preserved till some established mode shall be fixed; and in no one instance can this fluctuation be more fully exemplified, than in the

<sup>6</sup> The same as are called the letters Begadkepath in Hebrew.

<sup>7</sup> Mr. Niebuhr's orthography of this word is doubted, however, by other Ori-

entalists, he writes Bunder-Regh, the *Sandy Port*, for Bunderreck which seems rational and appropriate, but it is questioned.

expression of the Persian ' ك Kaf'. This letter our English navigators enounce as the soft G, writing Gidda or Jidda; but Michaelis asserts, that in the neighbourhood of the Gulph of Persia it is uttered like Tsch, and Niebuhr writes Dsj, as Dsjesira for Gesira. Even in Oriental fluctuation this sound becomes hard like our G, before a, o, or u; for Gesira passes into Ghesira, and Gasira; and still farther into K and Ch, as Dsjenk into Kienk,

\* Michaelis Extrait de Niebuhr, p. 19. Aux Environs du Golfe Persique on prononce ك Kaf comme tsch. La prononciation de certaines lettres differe beaucoup: par exemple le ك and ك, dont les Arabes du Nord & de l'Ouest se servent comme d'un K ou d'un Q, se prononce a Maskat & pres du golfe Persique comme tsch. Pour Bukkra Kiab on dit Bâtscher Tschai. Niebuhr. Arabie, tom. i. p. 119. Ed. Fr.

But Mr. Marsden informs me, that the letter in Jidda, &c. is not Kaf, but Jim, and that Jim is never hard. Without knowledge of the Persick, or Arabick, it is impossible for me to determine; but that there is an initial letter both hard and soft, I am sure, from such instances as Dgerum-Turum, Jirbe-Ghirbe, &c. &c. Deghel, Dejel, Dsjijile. Gim Arabum literâ cha, differt puncto tantum. Bochart. tom. i. p. 108.

" J'ai déjà remarqué . . . qu'il est difficile de bien orthographier dans sa propre langue, mais plus difficile encore dans une

langue étrangère, . . . c'est ce que est cause que j'avois quelquefois orthographié tout différemment les noms des mêmes villages, suivant la prononciation de différens personnes. Niebuhr. Voyage, tom. i. p. 57. Amsterd. edit.

And p. 74. Or si un écrivain Arabe a écrit différemment les mêmes noms, d'après la prononciation de plusieurs de ses compatriotes, le vrai Savant ne me saura pas mauvais gré, . . . que je n'ai pas voulu écrire moi-même les noms en caractères Arabes.

After these confessions, who can affect precision in writing Oriental names?

" Quod et Perfæ in Linguam suam adoptârunt, solitâ tamen iis mutatione, Lit. z dziem [jim] aut dzi in Ga vel g [duram] quod facere assolent si voces quasdam Arabicas Litera z vel dzem gaudentes in propriam linguam suscipiunt. Ind. Literata Valentini, p. 385.

" Michaelis writes Dschidda; Niebuhr, Dsjidda; for our English Jidda.

Ni les Grecs ni les Latins connoissent le son de sch en Allemand. Extrait, p. 31.



Kenk, and Chienk.; under another form, by adhering to the D, it drops the sj, and becomes Denk and Tenk. It is thus that Pliny writes Jomanes, and Ptolemy, Diamuna, for Jumna, the river of Dehli, which falls into the Ganges. With this copious source of variation, (and numerous others that are attendant upon other letters,) surely Michaelis confines etymology within bounds far too narrow, when he insists upon the appearance of individual letters to establish a conformity. In my opinion, the ear is a better guide than the eye. What European, upon the first view of the Oriental Bukhetunnusre", would discover that the sound is familiar? It is by the ear only we find that, with the addition of a syllable, it is Nabuchodonozor, the Nebuchadnezzar of the Scriptures. I wish not, however, to display the parade of research on this subject, for I have ventured little on etymology; if I escape from reprehension on the score of orthography", it is sufficient.

To accomplish the whole Work agreeably to my own satisfaction, a greater stock of geometrical knowledge and Oriental learning was necessary than has fallen to my lot, and I now submit it to the Public, not without

" Otter, tom. i. p. 182. So the English write Ser-po-jée for the Mahratta name Surra-botschi.

" See on this subject, Ludolphus Abyssinia, book iv. c. 1.

## P R E F A C E.

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apprehension that it is as likely to offend by minuteness", as to please by arrangement and variety of investigation. It is, however, a Work compiled by the labour of many years, and perfected to the best of my abilities, and it now stands for judgment before a tribunal from which there is no appeal.

" Minute as I must sometimes appear, the Right Reverend and judicious Editor of Cook's last Voyage will justify me by his example; for I have never spent the time upon an obscure place that he has upon Kerguelen's land; and never been so anxious to clear a difficulty about a name, as he has about Cape Louis and Cape François in that island; though the coast of Mekran is at least as interesting, and as likely to be visited again, as that southern Thulé. Neither his Lordship nor myself, I trust, deserve censure; but it is the taste of the reader which must decide.



P R E F A C E  
TO  
T H I S   E D I T I O N.

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**T**O the favourable report of Professor Heynè in the Gottingen Journal, to the new edition of Arrian's Indica by Dr. Schneider at Halle, and to the excellent French translation of M. Billecocq, the Voyage of Nearchus stands indebted for the degree of celebrity it has obtained upon the Continent.

In England it has so far maintained its credit, as to encourage the Publisher to venture upon a second impression; and the Author is flattered by his assurance, that an uniform edition of the Voyage of Nearchus, and the Periplus of the Erythræan Sea will not be unacceptable to the Publick. The common subject of both Works is the Oriental Commerce of the Ancients, and at a period when the empire of Hindostan is pervaded

by British influence; officers, both naval and military, in the service of Government, or the Company, as well as commercial men and men of letters, may feel an interest in recurring to the original intercourse opened between India and Europe, and in contemplating the difficulties of the first discovery compared with the facilities of the present communication.

The possibility of proceeding to a second edition is a satisfaction I feel in common with other writers; but it is a peculiar gratification that an opportunity is afforded me, of correcting my errors, and of communicating such additional information, as I have obtained by my own researches, or received from the suggestions of my friends.

Captain Blair, who served under Commodore Robinson, during the survey of the coast of Mekran, and Mr. Hurford<sup>\*</sup> Jones, formerly resident of the Company at Busheer and Basra, and now at Bagdat, honoured my work with a careful perusal as soon as it was published. From the first, I received several valuable particulars, and among others the curious circumstance, that Ashtola is still deemed an enchanted island by the natives on the coast, as it was in the time of Nearchus. And from the

<sup>\*</sup> Now Sir Hurford, and Ambassador to the King of Persia.

latter I received back the volume illustrated throughout with his comments in the margin.

The same favour was conferred upon me by Dr. Samuel Horseley, late Bishop of St. Asaph, who, in addition to his previous communication, honoured both my works with the most scrupulous attention, pointed out my errors with the freedom of a friend, and indulged me with the use of his own copy, in which he had noted a variety of useful and valuable observations in the margin.

The learned Schneider also, in his edition of the *Indica*, as he trod the same ground, was naturally led to form his own conclusions, which, although they in general coincided with mine, still they sometimes differed; his dissent, however, he has expressed with the candour and liberality of a scholar; and a material correction of his in regard to *Aginis*, I have adopted with gratitude: But if he has noted my errors, he has done me ample justice in his general approbation of my commentary; and, in translating my *Defence of Arrian* against the objections of Hardouin and Dodwell, he has not only expressed my sense with the greatest accuracy, but raised me to a rank of competition, which I had hardly flattered myself was my due.

But if several errors were noted by others, many more were discovered by myself, as my own information was continually on the increase; and if I have removed these silently without observation, I request the indulgence of the Reader to spare me the mortification of an acknowledgment, and to accept the Work completed to the best of my power, as the only atonement which remained. After all my care and attention it will not be perfect; but to labour at perfection, however unattainable, is still a moral virtue, and a Christian duty.

JULY 1, 1807.

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## ADVERTISEMENT.

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THE learned Reader will pardon the introduction of accentual marks over the proper Names which occur in the following Work ; and the general Reader will receive them with pleasure. The rules professed to be observed are the following :

I. To discard all the diphthongs in the original languages, except where they are final.

II. To mark diphthongs, or long vowels not final, with the circumflex, as *Orítæ*, *Pattalêne*, *Diodôrus*.

III. To mark a short syllable upon which the accent falls, when not final, by an acute, as *Ichthuóphagi*, *Cráterus*.

IV. To mark *e* final when pronounced, either long or short, with a grave, as *Pattalênè*, *Opônè*, *Caffrè*.

V. To follow the analogy of Greek quantity in barbarous proper Names, where it can be traced ; and where it is not discoverable, to adopt the Greek accent.

Some questionable accents are submitted to the candour of the Reader ; none are assumed, but all have a foundation, either real or imaginary.





# DIRECTIONS to the BOOKBINDER.

## VOL. I.

### NEARCHUS.

- ✓ The Head of the AUTHOR—to front the Title-Page.
- ✓ The Head of ALEXANDER—to front the Title-Page of the Voyage of Nearchus.

[N. B. This Head is engraved from a Macedonian coin of the age of Severus or Caracalla, and is supposed to be taken from a bust of Alexander, whose character was held in high esteem by both these Emperors. It has the name of Alexander on the front, and on the reverse The Commonwealth of Macedon, with the addition of

## ERRATA.

### VOL. I.

Page 64	line last but one	- - - - -	for	III	- - - - -	read	IIII.
83	note 14	- - - - -		Fenishta	- - - - -		Ferishta.
93	— 50	- - - - -		κασάιαι	- - - - -		κασάιαι
131	— 166	- - - - -		Becephala	- - - - -		Bucephala
245	line last but one	- - - - -		unseasonable	- - - - -		unreasonable.
263	note 219	- - - - -		Massan	- - - - -		Mayan.
350	— 100	- - - - -		Welford	- - - - -		Wilford
394	— 253	- - - - -		Bischer	- - - - -		Rischer
413	— 327	- - - - -		λιστρικοί	- - - - -		Λιστρικοί
533	line 13	- - - - -		Apumêa	- - - - -		Apamêa

Map of the Gulph of Persia, vol. i. p. 313, *dele* Pasitigris of Arrian, and *dele* Organa..

### VOL. II.

Page 235	line 5	- - - - -	for	a	- - - - -	read	was
238	— 10	- - - - -		guttural	- - - - -		guttural.
279	note 61	- - - - -		της	- - - - -		της
315	line 16	- - - - -		χυδαία	- - - - -		χυδαία
1b.	note 146	- - - - -		Μοφαρείτης	- - - - -		Μοφαρείτης
382	— 18	- - - - -		ὑπερκείσας	- - - - -		ὑπερκείσας.
409	line 3	- - - - -		Χρυσόλιθος	- - - - -		Χρυσόλιθος
547	note 54	- - - - -		ΑΤΑΥ	- - - - -		ΑΓΑΥ.

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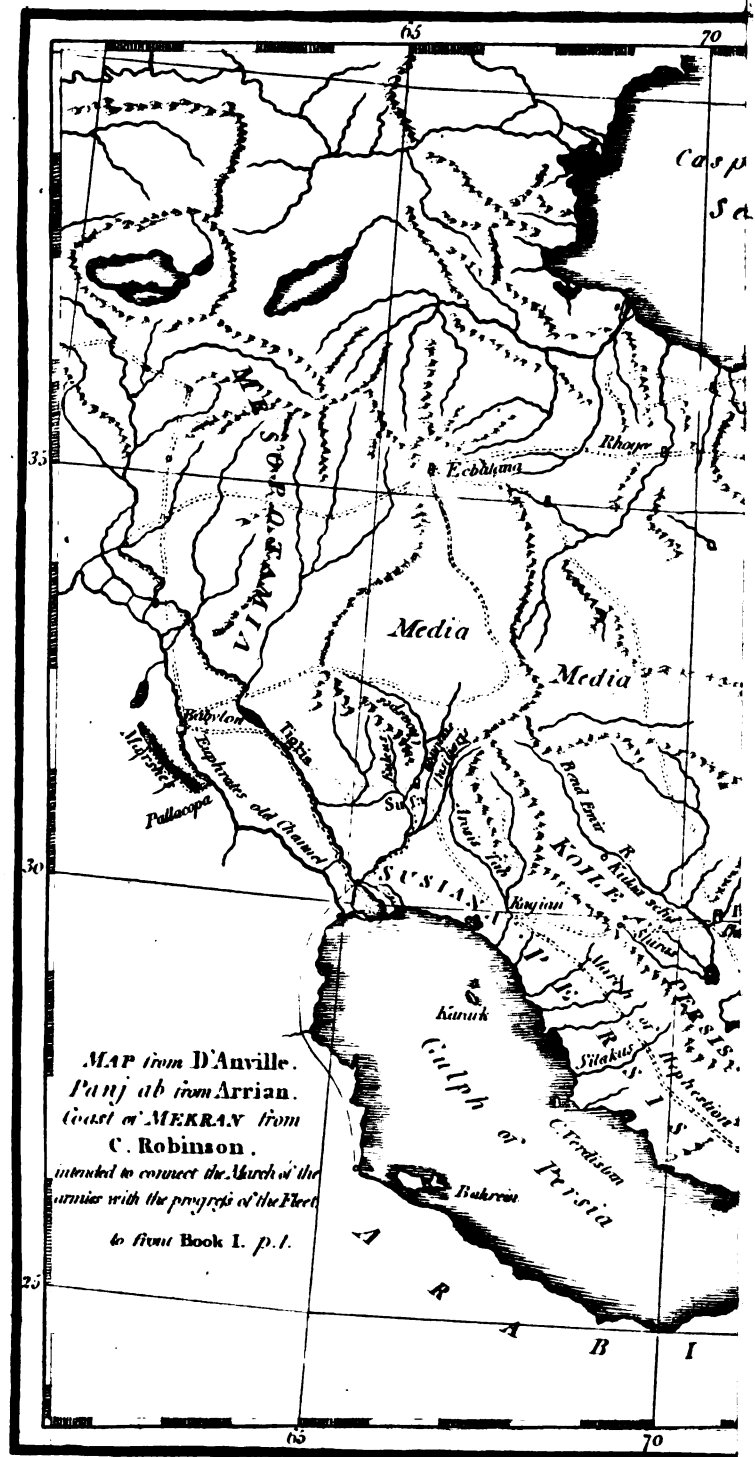
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BOOK I

PRELIMINARY DISQUISITIONS.

- I. *Introduction.*—II. *Character and Designs of Alexander.*—III. *Alexandria.*—IV. *Country at the Sources of the Indus.*—V. *Survey of the Empire.*—VI. *Geographers ; Pliny, Ptolemy, d'Anville, Rennell.*—VII. *Dates.*—VIII. *Monsoons. Hippalus ; Ptolemy ; Marcian ; Arrian, Author of the Periplus.*—IX. *Itinerary Measures.*—X. *Defence of the Authenticity of the Journal.*

I. **T**HE voyage of Nearchus from the Indus to the Euphrates is the first event of general importance to mankind, in the history of navigation ; and if we discover the comprehensive genius of Alexander in the conception of the design, the abilities of Nearchus in the execution of it are equally conspicuous.

Historical facts demand our attention in proportion to the interest we feel, or the consequences we derive from them ; and the consequences of this voyage were such, that as, in the first instance, it opened a communication between Europe and



the most distant countries of Asia, so, at a later period, was it the source and origin of the Portuguese discoveries, the foundation of the greatest commercial system ever introduced into the world; and consequently the primary cause, however remote, of the British establishments in India.

The narrative of this voyage has been preserved to us by Arrian, who professes to give an extract from the journal of Nearchus; and notwithstanding its authenticity has been disputed (which is a question that will be fully discussed hereafter), we may venture to assert, that it presents to an unprejudiced mind every internal evidence of fidelity and truth.

It has been the peculiar felicity of Arrian to rise in estimation, in proportion to the degree of attention paid to the transactions he records. As our knowledge of India has increased, the accuracy of his historical researches has been established; and as the limits of geography have been extended, the exactness of his information has become daily more conspicuous, and the purity of the sources from whence he drew, more fully acknowledged.

In regard to the voyage of Nearchus, a mere translation of the work of Arrian would have given but a barren detail of names, with little satisfaction to the curious spirit of modern investigation, and would in fact have been superfluous: for translations<sup>1</sup> of this narrative are to be found in Ramusio, Purchas, Ablancourt, Rook, and Harris<sup>2</sup>. But it is the design of the following work, to consider the views of Alexander in the direction of this undertaking, to elucidate the course of

<sup>1</sup> There have been also two translations into German: one by George Raphelius, Hamburg, 1710; and another by Conrad Arnold Schmid, at Wolfenbuttel, 1764. Schmeider.

Pref. ad Indica Arrian, p. xi.

<sup>2</sup> The voyage of Nearchus is not in the original collection of Harris, but inserted in Dr. Campbell's edition of that work.

Nearchus, and to identify the points in which ancient and modern geography coincide.

So far as concerns the passage down the Indus, and the navigation of the Gulph of Persia, this has been already performed by Major Rennell and Mr. d'Anville; but Major Rennell<sup>3</sup> leaves Nearchus at the mouth of the Indus, and Mr. d'Anville<sup>4</sup> takes him up at the entrance of the Persian Gulph; the intermediate space they have both abandoned, as too obscure, or too uninteresting for investigation, though the merit of the commander depends upon the difficulties he surmounted in this part of his voyage more especially; and the clearing up of the geographical obscurity was an object worthy of the talents of two such masters in the science.

The lights they have afforded, in the parts they have executed, the positions they have established, and the difficulties they have removed, will be adopted in the following pages, without reserve; if at any time I dissent from either, or both of them, I shall do it with proper deference to their authority; and if I assume an opinion of my own, it is a privilege they have exercised successfully, and a privilege I have an equal right to claim, not originating in caprice, but in a long and studious contemplation of my subject. To Mr. Dalrymple I have already expressed my acknowledgments; but besides his assistance to this immediate work, I derive from his communication a variety of the most correct charts, plans and designs respecting both the coast of Mekran and the Gulph of Persia; and, above all, a collection of Memoirs and Extracts accompanied with his

<sup>3</sup> Major Rennell, in his Memoir accompanying his Map of Hindostan. in the 30th volume of the Memoirs of the Academy of Belles Lettres.

<sup>4</sup> Mr. d'Anville, in a Discourse contained

own observations, on which I rely with confidence for the solution of every difficulty.

Such are the sources from whence I derive my information, and these, with the assistance of Tavernier, Otter, Pietro della Vallé, Thevenot, Sainte Croix, Cheref-eddin, Niebuhr, and the Ayeen Akbari, are the principal modern authorities upon which the following compilation is founded; the more ancient ones will be seen as they occur; and if the result upon the whole shall be, that the policy of Alexander in the design is as conspicuous as his felicity in the execution, the object of the work is attained.

## II. ALEXANDER.

THE researches of modern historians and geographers have taught us to consider Alexander neither as an hero of chivalry on the one hand, nor as a destroying ravager on the other. We are no longer misled by the invectives of Seneca, or dazzled with the inflated declamation of Q. Curtius. As the writings of Arrian have become better known, the just standard of this illustrious character has been fixed: the rapidity of his success has appeared the result of prudence<sup>3</sup> as well as valour, while his system of government and plans of empire have been found consistent with the soundest policy.

Previous to the expedition of the Macedonians, the empire of Persia had been invaded by Cimon the Athenian, and in a

<sup>3</sup> 'Οι μὲν ὅν ἄλλοι πάντες αὐτὸν ἐπιτυχῇ τινα, καὶ τὸ πλεῖον αἰεὶ παραλόγως καὶ ταυτομάτῃ κατορθῶντα τὰς ἐπιβολὰς παριστάγουσι . . . . . τὸ δὲ ἐπαινετὸν μόνον ἴδιον ὑπάρχει τῶν ἐλογίστων καὶ ἀρέτας ἰσχύωντων ἀνδρῶν. Polybius

de Scipione, lib. x. c. 2. Ed. Schweigh?

No praise is appropriate, unless it arises from the contemplation of actions founded on superior judgment and understanding.

more recent period by the Lacedæmonians, under the command of Thymbron, Dercyllidas, and Agesilæus. The utmost extent of these several invasions was to waste the provinces, to support a Grecian army with the spoils of Asia, and to insult the great King in return for the calamities brought upon Greece by the expeditions of his predecessors.

But Alexander, from the moment he crossed the Hellespont, considered every country he subdued as a portion of his future empire. He never plundered a single province that submitted, he raised no contributions by extortion. From the battle of the Granicus, to the final defeat of Darius at Arbêla, although he had overrun Asia Minor, Syria, and Egypt, the richest countries of the empire, his conquests were attended with no oppression of the people, no violation of the temples, no insult to religion. Order and regulation engaged his attention equally with the conduct of the war; his measures were taken with such prudence, that during eight years absence at the extremity of the East, no revolt of consequence occurred, and his settlement of Egypt was so judicious as to serve for a model to the Romans in their administration of that province, when it became subject to their dominion.

After the defeat of Darius at Arbêla, the flight of that unfortunate monarch, and the pursuit of the usurper Bessus, led Alexander to Sogdiána, Bactria, and the northern provinces of the empire. The consequence naturally was, that when he determined to enter India, he found himself at the sources of the Indus<sup>6</sup>.

<sup>6</sup> All the invasions of India are in the same course. The Ghaznavide Maghmud, the Patans, and Timour all crossed the sources of the Indus, as well as Alexander; and no enemy has entered India from the north or east. The reason is evident; the Sewalick mountains are a barrier on the north, the Ganges and Burham Pooter on the east, where Assam, Ava, and Arracan, are kingdoms always too weak or too barbarous to undertake an invasion of India.

The detail of his victories in the countries bordering on that river, is foreign to the present work, and will be no farther noticed than as it contributes to illustrate the progress of the fleet; we shall embark with Nearchus at Nicæa on the Hydaspes, and accompany him, assisted by the light of modern geography, till he delivered up his charge on the Pasitigris, within a few miles of Susa.

The completion of this voyage with the most perfect success, was intended only as a prelude to another, in which the circumnavigation<sup>7</sup> of Arabia was to be attempted; already had Archias<sup>8</sup>, Andrósthenes, and Héro been dispatched to explore the western side of the Gulph of Persia, and returned with an account of the progress they had made. Already had Nearchus prepared to embark, and Alexander had anticipated the commercial intercourse between India and Alexandria, when a fever snatched him from the contemplation of still greater designs, in the thirty-third year of his life, and the thirteenth of his reign.

### III. ALEXANDRIA.

It is perhaps imputing too much to the foresight of this extraordinary man, to assert that he had preconceived<sup>9</sup> this

Zingis Khan, who came from the east, passed westward to the north of the Himmalu and Hindoo Khoo mountains, Thibet and Cashmeer. He did not incline to the south till he was on the confines of Touran; consequently he overshot India, and fell upon the north of Iran. In Rennell, lxxviii. there is one invasion from Chitta or Thibet, in 1244, by the Moguls.<sup>\*</sup> Ferishta.

<sup>7</sup> A voyage by the Cape of Good Hope round Africa was also in his contemplation.

See Ar. lib. v. p. 230. where he tells his army that his fleet shall sail round that continent to the Pillars of Hercules. It is a boast, however, rather than a plan.

<sup>8</sup> See Ar. lib. vii. p. 301.

<sup>9</sup> Montesquieu, speaking of the design of Alexander in founding Alexandria, says,

“ Il ne songeoit point à un commerce dont la découverte de la mer des Indes pouvoit seule lui faire naître la pensée.” Esp. des Loix, liv. xxi. c. 8.

comprehensive scheme of commerce from the first foundation of Alexandria; but certain it is, that as his mind expanded with his success, and his information increased in proportion to the progress of his arms, the whole plan was matured in his mind before his death, and the execution of it nearly ascertained.

Whatever vanity is attached to the foundation of cities, and however this passion might operate upon Alexander, utility was still the prevailing motive in his mind. Harris<sup>10</sup> has judiciously observed, that most of the cities founded by the Syrian kings existed little longer than their founders; and perhaps, if we except Antioch on the Orontes, and Seleucia on the Tigris, there was not one capable of existing: but the Paropámisian "Alexandria", and that on the Iaxartes", continue to this day cities of importance; and the Alexandria of Egypt, after surviving the revolution of empires for eighteen centuries, perished at last only in consequence of a discovery which changed the whole system of commerce throughout the world. As this city was by the founder intended to be, and afterwards became, the

<sup>10</sup> Harris, vol. i. chap. 11. sect. 8.

<sup>11</sup> I doubt much whether the tradition of the natives ought to be considered as being even in the slightest degree conclusive. The Mohammedan historians of this part of Asia are fond of carrying the origin of cities to very remote periods; the general ignorance of the inhabitants, in respect to ancient history, scarcely permits them to question, much less to investigate, any thing, however improbable, which has been brought forward by an *author* as an historical fact. Alexander, extraordinary as it may seem, is ranked by them amongst the prophets; and they are fond of ascribing to him, or to Deeves (the Devil), the origin of

almost every extraordinary building or place. Mr. Hurford Jones.

<sup>12</sup> Candahar is supposed, both by d'Anville and Rennell, to be the Alexandria of Paropámisus, and the tradition of the natives refers it to Scander. It is still the principal city of the country of the Abdalli, a kingdom which has risen out of the ruins of the Persian and Mogul empires. But see d'Anville's *Eclaircissements*, p. 19. Major Rennell has since changed his opinion.

Cogend is determined to be the Alexandria on the Iaxartes by its position. See d'Anville *Geographie Ancienne*, tom. ii. p. 305.

centre of communication between India and Europe, it will not be foreign to our purpose to introduce some particulars concerning it, as the voyage of Nearchus was the primary cause of its aggrandizement.

Surrounded " on three sides by the sea, or the lake Mareôtis, communicating with the Delta and Upper Egypt, by means of that lake and channels, either natural or artificial; protected on the north by the Pharos, between which and the main, Alexander had projected ", and the Ptolemies completed, a double " harbour; the situation of Alexandria presented every inducement to the view of the founder, comprehending the means of defence, and facility of access united in a single spot. These considerations, doubtless, determined the choice of Alexander; for the whole sea-coast from Pelûsium " to Canôpus is low land, and not visible from a distance; the navigation along this coast, or approach to it, is always hazardous; the mouths, or Bogâs " (as they are called), of the Nile are at some seasons dangerous, even to a proverb; but the light-house on the Pharos, and the two harbours within it, obviated both these dangers; and Alexander, who knew the difficulty of approaching Egypt either by land or sea, eagerly seized on a situation which presented him with a post of the highest importance in a

" See d'Anville on the Topography of Alexandria. Mem. de l'Acad. & Geog. Anc. tom. iii.

" This design of Alexander is not hypothetical, for Hephêstion was to have had an Herôum in the Pharos, and his name was to have been inserted in all contracts between merchants. See Ar. lib. vii. p. 306.

" Salmasius says, "three ports." Plin. Ex. 479. Meaning to add the Eunostus.

" See Diodorus, lib. i. p. 36. who says, " on the whole sea-coast for 5000 stadia, from " Parêtônium to Joppa, there is no port but " the Pharos; the land is low," &c.

" From *Bocca*, Italian, and probably introduced on the coast by the *Lingua Franca*. See Wood's Essay on Homer, p. 110, et seq. Mr. H. Jones rather deduces it from a Turkish or Persian source. Bogas, a pass, defile, or bar of a river.

military view, and a harbour constantly accessible", at the same time.

These were sufficient motives for the foundation of the city ; but as the views of the founder dilated with his better information, so the testimony of Arrian assures us, that from the time he had formed his fleet on the Indus, he meditated a passage by sea from that river to the Gulph of Arabia. He completed what he had conceived in the most dangerous part, and left little more to the Ptolemies than to fill up the outline he had drawn. Had he lived one year longer, he might have seen the barrier removed which obstructed the communication between Europe and the eastern world, and the commerce of both continents beginning to flow in the channel he had opened. He might have contemplated the dawn of that splendour which was to rise on Alexandria, and the source of that wealth which was to render her the first commercial city in the world.

The advantages derived to every country which has participated in the commerce of the East Indies, have been so fully displayed by Dr. Robertson, that there is no pretence for encroaching on his province ; but that Alexander knew the value of this commerce, foresaw the consequences of it, and gave a direction to the course in which it flowed for eighteen centuries, is a glory which even the more important discoveries of modern Europe cannot obliterate.

Of his knowledge, no greater proof can be required than what Major Rennell has produced, in that admirable Memoir which accompanies his map of India ; where, from the journal of Mr.

" See Josephus de bello Jud. lib. iv. p. 1204. Ed. Huds.

The port is difficult of access to an enemy only, but those who are masters of Alexandria

can protect the entrance of friendly powers at all seasons, and it is the only port which is accessible at all in the tempestuous season.

τὰ πρὸς θάλασσαν ἀλίνετος. Ibid.



Forster, he shews, that Alexander in his route from the Paropámisus to 'Taxila', or the Attock, actually trod the road " which continues to this day to be the northern line of communication between Persia and Hindostan. This route he extended afterwards across all those streams which the Akesínes or Chen-ab carries into the Indus, and terminated finally at the Hy'phasis, or Biah.

#### IV. COUNTRY AT THE SOURCES OF THE INDUS.

THE province watered by these rivers, now denominated the Panje-ab, or five waters, is esteemed one of the richest provinces of the Mogul empire. When at the Hy'phasis, Alexander was not distant three hundred and fifty miles from the modern Dehly; and wherever we shall please to fix Palibóthra, its distance cannot be so great as to preclude the knowledge of its name, its wealth, and importance, from the Macedonians.

In all ages, whenever the state of the country was sufficiently peaceable to admit of commerce, there appears to have been a great intercourse by means of the Indus, descending from Multan, Attock, Cabul, and Cashmeer, to the coast of Malabar. Whether the vessels navigated on the river were capable of undertaking the voyage to that coast, or transferred their cargoes at Páttala into larger vessels, may be questioned; but the communication itself is evident. The trade which came down the river naturally took its course, rather to the rich pro-

" Taxila is usually considered by geographers as occupying a site on the Attock, but Arrian does not countenance this opinion. He says, lib. v. p. 199. " That it was the principal city between the Indus and the Hy-daspes." And in another passage, " Alex-

" ander marched from the Indus to Taxila;" an expression which implies distance.

" Some allowance must be made for deviations, in consequence of the situation of the tribes he subdued.

vinces of the peninsula than to the desert beaches of the Mekran; it extended possibly before the invasion of the Macedonians, as it certainly did in the following ages, round Cape Comorin into the Bay of Bengal and the mouths of the Ganges; thus uniting in commercial intercourse the two great streams which inclose Hindostan.

In the Peucaliôtis<sup>21</sup>, in the territory of the Malli<sup>22</sup>, in the kingdom<sup>23</sup> of Tâxiles<sup>24</sup>, and Pôrus<sup>25</sup>, Alexander traversed a country abounding in riches, and furnishing commodities from the thirty-second degree of northern latitude, which are sure of finding a market between the tropics. The population of these countries, as stated by Strabo, Pliny, Plutarch, and even Arrian himself, is doubtless exaggerated, but as they all drew from original sources, and quote authors who had personally visited these countries, whatever abatements may be made, we must still suppose that the apparent view of the whole suggested an idea of population, and presented an aggregate of cities, towns, and villages, of which, from the circumstances of their own country, the Macedonians had no previous conception.

These Authors<sup>26</sup> assert, that Alexander subdued five thousand cities in India as large as Cos. Mention is likewise made of a thousand cities in the single province of Bactria; and Arrian, who seems to be always on his guard, informs us, that the country of the Glausæ, or Glaucânisæ, contained thirty-seven cities, the smallest of which had five thousand, and the largest ten thousand inhabitants, and that the villages contained an

<sup>21</sup> Pukely Aycen Akbari, always. Peucanées of Dionysius Perieg. Liv. 1143.

<sup>22</sup> Moultan.

<sup>23</sup> Bayer very strangely supposes that Cabul is Taxila, p. 28.

<sup>24</sup> Attock.

<sup>25</sup> Panje-ab.

<sup>26</sup> Robertson, Rennell, Strabo, 693. 686. Pliny, 6. 17. 19. Plutarch, 699.

equal number; the whole, amounting to near half a million, Alexander added to the kingdom of Porus<sup>27</sup>.

Whatever degree of credit may be given to these accounts, they will at least evince an extraordinary population; and, either from the fertility of the country, or its situation among so great a number of navigable streams, the flourishing state of this tract appears manifest in every age, unless when desolated by invasion. The historian of Timour expresses the same admiration as the Greek writers; the Ayeen Akbari reckons the Panje-ab as the third province of the Mogul empire, and mentions forty<sup>28</sup> thousand vessels employed in the commerce of the Indus<sup>29</sup>.

It was this commerce that furnished Alexander with the means of seizing, building, hiring, or purchasing the fleet with which he fell down the stream; and when we reflect that his army consisted of an hundred and twenty-four thousand men, with the whole country at his command, and that a considerable portion of these had been left at the Hydaspes during the interval that the main body advanced to the Hyphasis, and returned to the Hydaspes again, we shall have no reason to accuse Arrian of exaggeration, when he asserts, that the fleet consisted of eight hundred vessels, of which thirty only were ships<sup>30</sup> of

<sup>27</sup> We ought not to be surprised at these exaggerations. Cheref-eddin says, Cashmeer really contains 10,000 flourishing villages, but is estimated at 100,000. Vol. iii. p. 161.

The level country is not more than twenty leagues from mountain to mountain. The capital is Nagaz, or *Syrin Nagar*, which Mr. H. Jones interprets Shereen Nagur, the sweet city.

<sup>28</sup> Maurice, p. 138. vol. i. from Ayeen Akbari.

<sup>29</sup> — Porum et Texilem reliquit in regnis suis, summo in ædificanda classe amborum studio usus. Q. Curtius, lib. ix. cap. 3.

<sup>30</sup> Τριακόντοροι καὶ ἡμιόλιας. Arrian, lib. vi. in init.

Τριακόντοροι implies, that they were not even gallies of war, such as the Greeks used in the Mediterranean, and which were called *Triremes*, gallies with three banks of oars; but these seem to have only one deck, and to be rowed with thirty oars on a line, that is, fifteen

war, and the rest such as were usually employed in the navigation of the river.

Strabo<sup>31</sup> mentions the proximity of Emódus, which afforded plenty of fir, pine, cedar, and other timber; and Arrian informs us, that Alexander, in the country of the Assacáni, and before he reached the Indus, had already built vessels which he sent down the Kophénes to Taxila. All these circumstances contribute to prove the reality of a fact highly controverted; and even though we were to extend the whole number of the fleet, comprehending tenders and boats, with some authors to two thousand, there is no improbability sufficient to excite astonishment.

By the same means that Alexander obtained a fleet, he acquired information in regard to the commerce of the country, and the different coasts with which the natives traded. Taxiles and Porus were both in his interest; many of their subjects doubtless embarked with him, either for the purpose of conducting the fleet, or with a view to their own advantage; many possibly who had frequently made the same voyage, and knew the commerce of the coast, from whom the inquisitive spirit of

on each side; the *ἡμιόλαι*, according to Gronovius, were half-decked, with the waist of the vessel left open for the rowers. But see Casaubon ad Athenæum. Not. 737.

Major Rennell mentions, that vessels of an hundred and eighty tons are used on the Ganges; and Captain Hamilton, p. 122, vol. i. says, that those employed on the Indus were, in his time, frequently of two hundred tons, divided into separate apartments which merchants hired for the voyage, and adapted most commodiously to the navigation. They carried a mast and sail, but were more usually

towed by men. The passage from Tatta to Lahore is six or seven weeks, but the return is made in eighteen days, or even twelve; the navigation is open, clear up to Cashmeer, by means of the Chelum; and Mr. Forster left Cashmeer by that stream, which he calls the Jalum. The course of this river is eight hundred miles from Tatta to Multan only, allowing for the sinuosities of the river. See Major Rennell's Memoir.

<sup>31</sup> Strabo, 691. Arrian, lib. iv. in fine. Rennell says, Emodus is not near.

Alexander could not fail to extract the information<sup>33</sup> necessary for the accomplishment of designs he had contemplated so long, and with such anxious solicitude.

The evidence of this does not rest upon deduction or conjecture; the report of Nearchus the admiral, and Onesícritus the pilot of the fleet, is still extant in the writings of Strabo, Arrian, Diodôrus, and Pliny; and though the credit of Onesícritus is impeached by Strabo, on account of his inclination to exaggerate, he does not hesitate to appeal to his authority in a variety of instances, which evince his general knowledge, and sometimes his intimate acquaintance with the country; but from Nearchus he proves, that all the native commodities which to this day form the staple of the East Indian commerce were fully known to the Macedonians. Rice<sup>34</sup>, cotton<sup>35</sup>, and the

<sup>33</sup> Οὐδὲ τὸτο δὲ ἀπίθανον τῷ Πατροκλῆϊ, ὅτι Φοῖβος Ἀλεξάνδρῳ συγκατένευσεν ἐπιδρομὰς ἐγερθεῖν ἑκάστα, αὐτὸν δὲ Ἀλέξανδρον ἀκρωτῆσαι, ἀναγραφάντων τῇ ὅλῃ χώρῃ τῶν ἐμπεροτάτων αὐτῶν. τὴν δὲ ἀναγραφὴν αὐτῷ δοῦναι, Φοῖβος, ὕμνον ὑπὸ Πτολεμαίου τῷ γαζοφύλακος. Strab. lib. ii. p. 69. Sainte Croix, 20.

Nor is there any reason to doubt what Patrocles says, that those who accompanied Alexander wrote at random; but that Alexander's own knowledge was accurate, as he obtained his information from those who knew the country best, and made them commit their intelligence to paper. These papers were communicated to Patrocles by Xenocles the Treasurer.—This passage possibly alludes to the survey of Beton and Diognetus. Sainte Croix extends it to more general information.

<sup>34</sup> Rice. "Oriza. Urithi in Sanskreet. The cultivation of it by flooding the lands is noticed by Aristobolus. Strabo, 692.

<sup>35</sup> Cotton seems to derive its name from the

fruit in Crete, called by Pliny Mala Cotonea, or Cydonia, lib. xv. cap. 11. It is distinguished by other names; Bombax, Bambax, Gossipium, Xylon; the cloth made of it, Byssus. Ferunt cotonei mali amplitudine cucurbitas, quæ maturitate ruptæ ostendunt lamiginis pilas, ex quibus vestes pretioso linceo faciunt. Pliny, lib. xii. c. 10. Byssus, referred by Parkhurst, Lex. in voce, to 2 Chronicles, iii. 14. צִבְצִיב. Byssos μετὰ ποικιλίας. Herod. lib. vii. Ezekiel, xxvii. 7. Beloe, p. 287. possibly printed cotton, and worn by the priests in Egypt. The Editor of Chambers's Dictionary says, it grew originally only in Egypt; but certainly he is mistaken. See Salmas. Plin. Ex. 296. Bombyx, however, is in reality the silk-worm, though ill applied to cotton. See Hoffman in voce, and Vossius ad Metam. Ed. Var. p. 563. from Pollux. It is proverbial in Arabia, tom. iii. p. 729. Textu Bombyx, rete mortis suæ suamet manu.

fine muslins made of that material, the sugar-cane<sup>35</sup>, and silk<sup>36</sup>, are all expressly mentioned in a passage which he adduces from Nearchus; and however the Greeks or Romans became afterwards acquainted with these commodities; the first knowledge, or at least the first historical account of them, is certainly to be attributed to the Macedonians. None of these articles had ever been brought into Greece, or any part of Europe, by sea, and few of them had ever been seen unless by accident; on these, however, it is evident, Alexander depended for the foundation of the commerce he meditated, and for the

<sup>35</sup> Sugar. Ἐρπον δὲ καὶ περὶ τῶν καλέμεν ὅτι τοῖσι μέλι, μελισσῶν μὲ ὄντων. This assertion, Strabo (694) quotes expressly from Nearchus. He speaks also of canes from which honey is made, though without bees. I do not know that Saccharum is used by any author prior to Pliny and Dioscorides, lib. xxi. 8. Saoccharum et Arabia fert, sed laudatius India. See Salmasius Plin. Ex. vol. ii. et seq. who has a long dissertation upon the subject, and imagines Pliny's Saccharum, as well as that of Dioscorides, to be manna. Niebuhr. i. 207. says, manna is used in pastry at Mosul and Diarbekir. See Vossius ad Metam. Ed. Var. 864. who directly contradicts Salmasius. The κάλαμος of Nearchus is the true sugar-cane. Sacar appears to be a word of Arabick extraction. Shuker. Mr. Jones.

<sup>36</sup> Silk. The passage in Strabo is not express; but having mentioned cotton before, he adds, τοιαῦτα δὲ καὶ τὰ Σηρικά ἐκ τίνων φθῶων ξαιρομένης βύσσου.

Velleraque ut foliis depectant tennia Seres.

Virg.

The Critical Reviewers, October 1791, p. 126, interpret this of cotton, as does Salmasius, p. 298. and p. 998: they call the Sères, inhabitants of Bocharia, and Ser-hend, Serinda on the Indus, the staple for silk.

When in Sogdiana, Alexander was in the neighbourhood of Bocharia; but the mention of Σηρικά by Strabo is incidental to India; and if it were not for a passage in Arrian, which seems to relate to the same quotation from Nearchus, I should not hesitate to refer this expression of Strabo's to silk. Arrian says, Ἐστὶ δὲ λινὴ Ἰνδοὶ χρῶνται καθάπερ λέγει Νέαρχος. λέγε τὸ ἀπὸ τῶν δένδρεων, &c. &c. Indic. I have since learnt, that the Reviewers follow the authority of d'Anville Eclairciss. but that great geographer's error is, consulting similarity of sound in names too much. When the locality is established, resemblance of sound is a strong confirmation, but to fix locality by sound is beginning at the wrong end. I cannot help thinking, however, that the mention of Sères and Sérica in allusion to cotton is always error or confusion; for we must observe, that silk, when it came to be known and characterised, was always Sérica; while the knowledge of cotton or vegetable wool is as old as Herodotus at least, in Greece. The silk-worm is first described by Pausanias Eliac. sub fine. Gibbon, vol. iv. p. 72, from d'Anville Eclair. Chambers's Dictionary. See Salmasius, p. 204, and Vossius ad Melam. p. 563, and Ammianus Marcellinus, lib. xxiii. p. 467.

introduction of these he was now planning the communication which was to perpetuate the intercourse between Europe and the East Indies.

At this day, when we view the effects, without adverting to the cause, we may deem lightly of a voyage which required so much preparation to accomplish, and which a single sloop would now perform in a tenth part of the time ; but the merit of the attempt is to be estimated by the originality of the conception ; and we must allow much to the penetration of that mind, which could fix upon the productions of any country as a basis for commerce, that should continue in request for two thousand years, and create a demand perpetually on the increase.

The knowledge of India obtained by the Macedonians will perhaps be as fully exemplified by adverting to objects of curiosity as utility. Of this, Strabo and Arrian furnish abundant testimony, who from these sources drew all the information they have left us ; and however their account may be deficient in some subordinate particulars, the general outline is faithful. This will immediately appear by selecting some of the most striking characteristics peculiar to the Hindoos, in their superstition, their policy, manners, habits, and customs, which will at the same time prove that the nation is essentially the same after the revolution of two thousand years, and that the Macedonians were no ordinary inquirers.

I. It is true that Strabo and Arrian from Nearchus reckon seven casts or tribes. 1. Philosophers or Bramins. 2. Husbandmen. 3. Herdsmen, Shepherds, and Hunters. 4. Artizans. 5. Soldiers. 6. Inspectors of Manners or Police. 7. Counsellors of the Chief Magistrate. Now though this account be not correct, for there are only four original casts: 1. Bra-

mins<sup>37</sup>. 2. Soldiers. 3. Merchants or Mechanics. 4. Soodras or Servants; yet are these branched out into such a variety of subdivisions, by forbidden marriages<sup>38</sup> and degradation of cast, that the mistake was natural to those who visited India for the first time.

II. The manner of hunting and taming the elephant are described by Arrian, p. 328. Strabo, 711.

III. Women were not dishonoured who received an elephant as the price of their favours. Arr. 331. Strabo, 712.

IV. There were no slaves in India. Arr. 330. Strabo, 710. This is in one sense still true, for no Hindoo is a slave; but Menu mentions seven sorts: 1. Prisoners of war. 2. Those maintained in consideration of service. 3. Those born of a female slave. 4. Those sold; 5. or given; 6. or inherited. 7. Those degraded for not paying fines. Menu likewise forbids Bramins to deal in slaves. See Menu, p. 242. 300. Onesícritus says, there were no slaves in the country of Musicánu.

V. Gold collected in the rivers. Strabo, 718.

VI. Chintz. Σινδόνες ἰνδιανῶν. Strabo, 709.

VII. The palm tree<sup>39</sup> called Tala, of which the head is eaten. Arr. 320.

<sup>37</sup> See Sir W. Jones, on Menu. p. 28.

1. Brahmeni—Scripture—Priests. Menu. p. 5.

2. Chatriya—Protection—Soldiers. Menu. 299.

3. Vaisya—Wealth—Merchants, Husbandmen. Menu. 5.

4. Sudra—Labour—Labourers, Servants, Menu. 5.

Brahmeni has, however, another derivation, p. 28. Menu. *Brahma great en or eni one.* United to the great Deity.

<sup>38</sup> The offspring of a Bramin by an inferior

woman becomes pure only by avoiding mixture, and not till the seventh generation. Menu. p. 297.

<sup>39</sup> Tala Borassus, the Palmeira or Toddy palm tree. Asiat. Res. iv. p. 235. Calcutta Ed. Ives, Appendix, p. 458. Nicola di Conti, in one passage, makes it the palm tree which produces leaves to write on; in another, the Palmeira. Ramusio, i. p. 343. Valentine, in his Indica Literata, seems to intimate that it is a generic name, p. 383. See Schneider in *Asiatic* c. 7.



VIII. Cotton raiment, (Strab. *passim*.) which reaches to the middle of the leg. Ar. 330.

IX. Parrots\* and monkies. Ar. 329.

X. Strigils and shampooing. Strab. 709.

XI. Intermarriages between the casts forbidden. Ar. 320. Strab. 704.

XII. The knowledge of letters is denied by Megasthenes, Strab. 709. but asserted by Nearchus, who says they write on linen or cotton cloth, and that their character is beautiful, which is true of the Sanskrēt. Arr.

XIII. Rice planted in water, and wine from rice, that is arrack. Strab. 709.

XIV. Food of the natives, *oryza sorbilis*, or pillau. None eat flesh but the hunters. Arr. 331. Strab.

XV. The men wear earrings, dye their beard, use umbrellas, wear canjars or daggers at the girdle, and turbans on the head. Arr. 330.

XVI. The Hindoos never exercise two trades, always follow their father's profession. Arr. 326.

XVII. Perforate the nose and lips. Strab. 717.

XVIII. Women hunt with the King. The ground marked out. No man suffered to approach. Strab. 710.

XIX. Women attend the King in war. Strab. 710.

XX. Two sorts of philosophers, Brachmānes and Germānæ : the first more properly Priests and Diviners ; the second Hylobii, Hermits, or Joguès. These latter enter every house, even the women's apartments. Many are attended by women, but without suspicion of intercourse. Penances and mortifications

\* Mentioned also by Ctesias.

of the Joguès, their residence under the banian trees, their discourse usually on death, their philosophy that the earth is spherical, and that the Deity is *anima mundi*“. Strab. 713. They burn themselves, not to avoid evil, but to enter into a new life, or to be united “ with the Deity. Strabo records Zarmano-Khégas, that is one of the Germánæ, still called Sarmanes by the Hindoos, (Sir W. Jones’s Asiatic Dissertations, vol. i. p. 107. Lond. Ed.) who was one of the ambassadors from Porus, King of six hundred Kings, to Augustus, and who burnt himself at Athens on his return to India : his epitaph was ΖΑΡΜΑΝΟΧΗΓΑΣ [or Σάρμανος Χήγαν] ΙΝΔΟΣ ΑΠΟ ΒΑΡΓΟΞΗΣ [Barugazēs?] ΚΑΤΑ ΤΑ ΠΑΤΡΙΑ ΙΝΔΩΝ ΕΘΗ ΕΑΥΤΟΝ ΑΠΑΘΑΝΑΤΙΣΑΣ ΚΕΙΤΑΙ: that is, Here rests Khegas or Khegan the Joguè, an Indian from Barugaza (or Baroach), who rendered himself immortal, according to the custom of his country. Whether Khegan be a proper name, or a title, the same as Kheganus, Khaghan, or Kawhn, may be dubious, (see Duncange in voce, Gibbon, ii. 572. iii. 161.) but Zarmános is evidently his profession, as one of the Hylobii or Joguès; and if he came from Baroach in Guzerat, it was the regular port at which he would embark from the kingdom of Porus; for Porus is Poor, the Prince, Sovereign, or Maha-Rajah of the Hindoo principalities, whose capital is now generally supposed to have been in Agimere; for Agimere has almost in all ages been con-

“ The Deity is represented universally in Menu as the soul of the world; but the Bramins are not materialists, for all matter and substance is an illusion. Sir W. Jones’s Discourse, Feb. 1794. The Deity, however, at last proves to be a spirit homogeneous to the spirit of man, for all spirit is homogeneous. Id. *ibid*.

“ All the mortifications suffered by the Joguès seem to be finally intended as the means of avoiding the metempsychosis, and the hope of being united with the Deity, or absorbed in his essence; and this, if all spirit is homogeneous, implies no absurdity, but the loss of individual existence.

sidered as the sovereign residence of the Rajpoots, previous to the rise of the Mahrattas, and continues so in a degree to the present day.

These circumstances, and the other particulars collected solely from Strabo and Arrian, are derived altogether from Macedonian information, that is, from the followers of Alexander, or the ambassadors of the Seleucidæ; and they are so perfectly in correspondence with modern accounts, as to prove the Macedonians equally curious in their inquiries as they were superior in military science. The enumeration of particulars might easily have been enlarged, but these are sufficient to prove that the first rational information relative to India was received in Europe from Alexander; and it is to substantiate that proof that they are introduced into this work. I cannot, however, quit the subject without mention of the Pramnæ, who are a sect of philosophers uninfluenced by the superstitions of the country, (Strabo, 718.) who are in constant opposition to the Bramins, and who enter into controversy with them whenever an opportunity occurs. Men of this description (but whether a sect or not is difficult to determine) are met with all over India to this day, in allusion to whom Shah Jehan said, "the Philosopher is always at variance with the Priest."

Such is the information derived to us through the medium of Strabo and Arrian, from Aristobûlus, Nearchus, Onesícritus, Megásthene, and Daimachus. It would be thought matter of ostentation to pursue the traces of this knowledge through inferior or more recent authors. What is here collected is sufficient to prove the spirit of observation and inquiry which pervaded the Macedonians; and their original materials furnish the ground-work of that accurate investigation pursued at this

day with so happy an effect by our countrymen on the banks of the Ganges.

## V. SURVEY OF THE EMPIRE.

THE object of introducing these observations is to shew that the design of Alexander in planning the voyage of Nearchus was not merely the vanity of executing what had never yet been attempted, but that it was a system founded on a presumption of the advantages to be derived from it, a desire of knowing the coast as well as the interior of his empire, and a reasonable hope of uniting the whole by mutual communication and reciprocal interests.

By tracing the correspondent parts of this system, we shall be able to evince its reality; for though the opening of the world to the knowledge of mankind, as Curtius expresses it, proved in the event a concern of far greater magnitude; the survey of the empire was of more immediate importance to the conqueror. The line of conquest from the Hellespont to the Indus was complete, but the intermediate country was by no means sufficiently explored. The route of the army, after the death of Darius, had been mostly <sup>43</sup> to the North of the Paropámisus, or that range of mountains, by whatsoever name distinguished, which in Oriental geography separates Iran from Touran. India had been entered on its northern boundary; and when Alexander had completed his campaign at the sources of the Indus, his march and voyage down the course of that river defined the eastern limit of the empire: commencing again

<sup>43</sup> Notwithstanding particular expeditions to Propthasia, Arachosia, &c.

from this limit, he resolved to explore the southern provinces, which though they had submitted to the reputation of his arms, were in a political sense still unknown.

To obtain the information necessary for the objects he had in view, he ordered Cráterus, with the elephants and heavy baggage, to penetrate through the centre of the empire, while he personally undertook the more arduous task of passing the deserts of Gadrôsia, and providing for the preservation of the fleet. A glance over the map will shew, that the route of the army eastward, and the double route by which it returned, intersect the whole empire by three lines almost from the Tigris to the Indus. Cráterus joined the division under Alexander in Karmania; and when Nearchus, after the completion of his voyage, came up the Pasitigris to Susa, the three routes through the different provinces, and the navigation along the coast, might be said to complete the survey of the empire.

If the work of Beton and Diognétus had come down to us, or had been as carefully extracted, as the voyage of Nearchus, we should have had better geographical data for establishing the interior divisions of the Persian empire, than any we can now obtain, either from the reports of travellers, or the historians of Timour and Nadir Shah. They are said to have reduced, not only the marches of the army, but the provinces themselves, to actual measurement; and though the rapidity of the movements and the shortness of the time would not admit of an actual survey<sup>4</sup>, distances accurately set down, and journals faithfully

<sup>4</sup> Much more may be done with precision in a short time than is generally supposed; a chain of triangles may be carried on in most countries quicker than an army could march, I might say in any country, except flat and woody, or the defiles of mountains. *The Mahomedans of India measure every road they march; at least, I know this is sometimes the custom, I believe always. Dalrymple.* If the Mohammedans of India practise this,

kept, are, next to astronomical observation, the first principles of geography. These officers undoubtedly attended one or other of the armies upon their return, or they might have been allotted one to each; in either case, the attention of Alexander is evident, for the survey itself is attested by almost every contemporary historian<sup>45</sup>, and was extant in the time of Strabo and Pliny.

Arrian himself has given some countenance to the report concerning the motives which induced Alexander to traverse the deserts of Gadrôsia. He tells us, that even Nearchus imputed this attempt to vanity and the desire of imitating or surpassing Bacchus and Semiramis; the Bacchanalian triumph of the army in its passage through Karmania, recorded by other historians, gives some degree of authority to the testimony of Nearchus; but Arrian, though he relates the circumstance, professes his disbelief of the fact; and an attentive consideration of the designs already displayed, supported by the internal evidence which the journal itself will suggest, ought, in an unprejudiced mind, to exculpate Alexander from the charge of any unworthy motives. To perform what has never yet been performed is doubtless an object of ambition, but the utility of the performance determines the merit of the performer.

That Alexander had a thirst after knowledge<sup>46</sup> as well as conquest is a fact sufficiently established; and the testimony of

they do what no other Mohammedans of Asia do. The general, I believe I may say the universal, custom is to ascertain distance by a computation of the distance which a cofla or caravan travels in the space of an hour. Every person conversant in Turkish, Arabic, or Persian, will recollect Katch Saiët, Chum Saiët, Chund Saiët? the beginning of every interro-

gation in respect to distance. Mr. H. Jones.

<sup>45</sup> Sainte Croix mentions Ptolemy and Aristobulus, p. 20. but I have not yet found his authority.

<sup>46</sup> The edition of Homer. The letter to Aristotle, complaining of his publication. The eight hundred talents allowed to that philosopher for researches in natural history.

Patrôcles, which has been already adduced, goes to prove, that the geography of his empire, and an accurate information concerning the several provinces, formed one of the principal objects of his inquiries. The attention of his officers to these points naturally took its direction from the example of their master; and whatever complaints Strabo has to prefer against such writers as Callisthenes and Onesícritus, the journals of Ptolemy<sup>47</sup>, Aristobûlus, and Nearchus form the basis of Oriental geography, not only as it rose by the labours of Strabo and Arrian, but in the superstructure erected by the masterly hands of d'Anville and Rennell. Aristobûlus composed his work at eighty years of age; Ptolemy<sup>48</sup>, after he was King of Egypt: fear, flattery, and every other inducement to falsification had subsided; they sometimes contradicted each other in regard to historical facts; but as they both drew most probably from commentaries<sup>49</sup> they had framed, during the course of their campaigns, the marches of the army, the position of cities, rivers, mountains, and the general face of the countries they traversed, come out with extraordinary perspicuity, when traced by a master in the science; and every increase of geographical knowledge tends to confirm the accuracy of their reports.

#### VI. GEOGRAPHERS.

MAJOR RENNELL has borne the most honourable testimony both to their information and fidelity, by confessing that, as his own researches advanced, he was continually led to consider the

<sup>47</sup> Afterwards King of Egypt.

<sup>48</sup> And from the works of Beton and Diog-

<sup>49</sup> Sainte Croix, p. 19. from Macrobius. nêtus. Sainte Croix, p. 20. Arrian, p. 2.

details of these officers as more important, and their accuracy as more fully ascertained. The map which he has himself given, corrected by the journal of Mr. Forster, and explained in his *Memoir*, corresponds not only with the route of Alexander, but with those of Timour<sup>30</sup> and Nadir Shah, with the journal of Tavernier, Goez the jesuit, Bernier, and the whole history of Ferishta.

Major Rennell professes to have laid down the western sources of the Indus and the rivers of the Panje-ab from the map of a native; and says, that as his own ideas grew correct from this communication, he was consequently better enabled to follow the campaign of Alexander in that country, and trace his movements as they arose; he speaks with confidence as to all the transactions in the Panje-ab, and hesitates only upon some points of less importance to the westward of the Indus. But in a work appropriated to the military transactions of the Macedonians, in which I had once traced the route of Alexander from it's commencement to it's termination, I had the satisfaction to find, that

<sup>30</sup> In the route of Timour given by Cheref-eddin, there is a regular mistake of the Ravée (Hydraotes) for the Biah (Hyphasis); and this mistake arises from Timour's being drawn southward to Ajjodin, near which city he crossed the Biah, where it takes the name of Dena or Donde; but as Cheref-eddin upon Timur's return calls the Biah the river of Lahore, vol. iii. p. 154. and as we know Lahore stands on the Ravée, or Hydraotes, the mistake is easily adjusted.

Tavernier, vol. ii. p. 61. mentions two routes from Candahar; one to the North by Cabul, which he details; the other direct by Moultan, which he omits. The account is barren, and makes us doubt whether Tavernier

travelled it himself; but he speaks as if he had.

Goez, according to Kircher, *China Illustrata*, p. 62, went from Lahore to Attock and Cabul, and thence through Tartary to China. See Grueber in Mel. Thevenot, vol. i.

Bernier came from Dehly to Lahore; his object is to give the pomp of the camp, and the description of Cashmeer; his geographical materials are very scanty.

Hanway's account of Nadir Shah's route is so totally erroneous, that though we can trace the conqueror we cannot follow the historian. Jones's Nadir Shah is transported from Candahar to Carnal in a moment. Frazer, in geographical materials, is very deficient.



the accuracy of his Persian information is as conspicuous to the westward of the Indus as to the eastward ; and that through the diligence of his inquiries we are now possessed of data which, there is reason to believe, every future research that may be made, will contribute to establish. Major Rennell likewise informs us, that his Persian map exhibited a series of the rivers with names correspondent to those which occur in the Greek historians ; but he has favoured us only with that of the Béypasha, sufficiently agreeing with the Hy'phasis of Arrian ; this reserve " is the more to be regretted, as the communication would have contributed greatly to correct the errors and elucidate the obscurity of his predecessors.

The *Antiquité Géographique de l'Inde* of Mr. d'Anville is far from standing upon a level with the merits of his other works ; and Major Rennell " has observed, with great justice, that having mistaken the Chelum or Hydáspes for the Indus of Alexander, he has consequently misplaced and misnamed all the subsequent rivers of the Panje-ab. This is far from being the only error of that able geographer ; he has confounded the rivers to the west, as well as those to the east of the Indus, and by adopting the Shantrou for one of the Panje-ab streams, (a name which he has obtained from Bernier, and in which he does not discover that Chen-ab lies concealed,) he has confounded the Díndana, Chelum, or Hydaspes, with the Genave or Acesínes, and placed Lahore on that river, which, by the testimony of all the authors he usually follows (Cheref-eddin " , Tavernier, and Thevenot), is

" This was corrected in the third edition of the Memoir.

" Rennell's second Memoir, p. 82.

" Cheref-eddin in fact places it on the Biah, but his error has already been adjusted,

p. 21 ; and that error should have led d'Anville to assume a river for the position of Lahore rather to the eastward than the westward of the Ravce.

undoubtedly on the Ravee. The principal source of these mistakes, which Major Rennell has not sufficiently noticed, is a determination of Mr. d'Anville's to find Aornus in Renas. Unfortunately for his hypothesis, the Aornus of Alexander was to the west of the Indus, and Renas is between the Indus and the Chelum. The necessary consequence is, that d'Anville is obliged to call the Chelum, or Hydaspes, the Indus of Alexander, and afterwards to perpetuate a chain of error, the result of his original mistake.

There would have been no difficulty to find a Petra answerable to Aornus in any situation to the westward of the Indus. The whole country is mountainous, and infested with mountaineer tribes of banditti, as was experienced by Timour and Nadir Shah, no less than by Alexander. Even an error in this respect would carry no consequences with it; but the misplacing of a river vitiates the remainder of the series. This confusion is not noticed to detract from the merits of Mr. d'Anville, whose geographical reputation stands too high to be impaired by a failure in a single instance, but to evince the danger of indulging a spirit of system, a system founded upon a resemblance of ancient and modern names, never exemplified more fancifully than by a supposition that Renas<sup>44</sup> and Aornus are the same word, and never to be admitted unless it is justified by local circumstances rather than similarity of sounds.

Having laboured in the investigation of these points several years before the appearance of Major Rennell's Maps and Memoirs, and having no greater authority to apply to than Mr. d'Anville, I had determined to abandon the work itself, for want

<sup>44</sup> Antiq. Geog. de l'Inde, p. 17.

of sufficient materials to clear the difficulties which attended it : but upon the first view of the last Map and Memoir, finding all the sources of Indus elucidated in the most consistent manner, I resumed my labours; and if this country can now be detailed with perspicuity, let the merit be referred to that author from whom it originates.

The mistakes of d'Anville prevent the application of those materials which modern discoveries have supplied. The errors of the ancient geographers are of less consequence, as both Pliny and Ptolemy give us generally the same series of rivers as the historians of Alexander present, and, however erroneous they may be in particulars, still preserve the general features of the whole. Pliny<sup>55</sup> enumerates the Kophes, the Indus, the Hydaspes, the Hyphasis, the Hesudrus, in the order they occur, and though he omits the Acesines and Hydraotes, the picture, however incomplete, is not disfigured; but when he adds that Alexander sailed down the Indus at the rate of six hundred stadia a-day, and yet it required more than five months to reach the mouth of the river, he is mistaken in his premises; for it will be proved from Strabo and Arrian, that the passage took up nine months, and that various expeditions delayed the fleet as it arrived successively at the several tribes bordering on its banks. Perhaps we ought to read the passage hypothetically; but the assertion itself is extravagant. Six hundred stadia repeated for an hundred and fifty days produce ninety thousand; this sum, reduced by the standard of eight stadia to the Roman mile, amounts to eleven thousand two hundred and fifty miles, and it gives no less than six thousand by the proportion of Mr. d'An-

<sup>55</sup> Lib. vi. c. 17.

ville's stadium of fifty-one toises, while the real space upon Rennell's map occupies only eight hundred. These exaggerations<sup>56</sup> doubtless originate from the authorities which Pliny followed, and even Arrian himself is not free from charges of a similar nature, though in a lower degree; but if Pliny had consulted his own reason instead of copying his authorities with servility, he could never have assigned six thousand miles to the course of the Indus between Nicæa and the sea, when he gives less than five<sup>57</sup> thousand to the whole extent of Asia, from the Caspian defiles to the mouth of the Ganges.

The errors of Ptolemy<sup>58</sup> are of another nature, consisting generally in a mistaken calculation of longitudes and latitudes; but whatever cause we may have to lament his deviation in particulars, geography is more indebted to him for having introduced, or at least for having established, this method of determining local situation, than it can ever suffer by a failure in the application of his principles. The sources from which Ptolemy drew, do not sufficiently appear; but as he was a native of Egypt, and lived at the same period with Arrian, a period in which the trade between the Gulph of Arabia and India was in full vigour, we may imagine that he had better means of information<sup>59</sup> at Alexandria, the centre of this commerce, than Ar-

<sup>56</sup> *Proditor Alexandrum nullo die minus (quam) stadia sexcenta navigasse in Indò, nec potuisse ante menses quinque enavigare, adjectis paucis diebus. Lib. vi. c. 17.*

<sup>57</sup> This will be proved when the stadium itself is taken into consideration.

<sup>58</sup> Those who wish to analyse the source of these errors, and the means of correcting them, may refer to Mr. Gossellin's Treatise, Geogra-

phie des Grecs analysée; where, if they do not find themselves satisfied with his principles of correction, they will at least obtain the clearest view of ancient geography which has yet been presented to the Public.

<sup>59</sup> See this confirmed by Ptolemy himself, *Geogr. lib. i. c. 17.* Dodwell *Dis. in Perip. Mar. Erythræi*, p. 90.

rian himself had, or any other historian or geographer who lived in the interior provinces of the Roman empire.

This being the case, it is a satisfaction to find, that however misplaced the sources or the mouths of the Indus appear in the maps adapted to Ptolemy by Mercator or Gossellin, there is still, in a geographical view, nothing in Ptolemy inconsistent with Arrian.

The five rivers of the Panje-ab are given in their order, and though the junction of these rivers is necessarily laid down by those who formed the maps correspondent to the author's text, and according to their own knowledge or conjecture, the general similitude is preserved, and the order uninterrupted.

The Hydaspes, Sandabalis, Rhúadis or A'daris, Hy'pasis, and Zarádrus of Ptolemy, are the Hydaspes, Acesínes, Hydraôtes, Hy'phasis, and Zaranga of Arrian. The A'daris\* is only a variation in writing the Hydraôtes of Arrian, the Hyarôtis of Strabo, all derived from the Indian Ivarati\*; and the Sandábalis, if conjecture deceives me not, is merely a variation of writing Sand-ab, for San-ab, still appearing under the form of Tchen-ab, and depending, as I am informed, upon the enunciation of a Persian\* letter, which fluctuates between the sound of B and V; but of this I shall presently speak more at large.

The mouths of the Indus are as much disordered in the maps adapted to Ptolemy as the sources; and the origin of this disorder is the small difference of longitude which Ptolemy gives be-

\* Rhoadis is the Greek text in Ptolemy; A'daris, the Latin. pore, Visiapoor, Vizapoor. So is this river written Chen-ab, Jen-ab, Gen-ave. See infra.

\* See Tieffenthaler.

\* Thus Gezira is written Djezira, Beja-

tween Lonibáre, the eastern mouth of that river, and Syastra, a town in the bay of Canthus or Cutch. The difference set down is only thirty minutes, and the result necessarily is, that Lonibáre is advanced so much to the East as to fall into the head of the bay, and occupy the place which modern geographers assign to the river Paddar.

Ptolemy furnishes us with seven mouths, and enumerates their names; and it is a just cause of complaint that modern geography neither supplies us with the means of confirming his assertion, or correcting his errors. It is probable that all great rivers which pass through level ground to the sea, as the Nile, the Danube, the Ganges, and the Indus, in process of time vary the channel of their respective mouths, either by inundation, obstructions, accumulation of soil, and other causes, or are diverted for the purposes of agriculture and communication. This has been so remarkably the case in regard to the Nile, that hardly any two geographers, ancient or modern, correspond in their account. The mouths of the Indus labour under the same obscurity. Major Rennell's second map differs essentially from his first; three charts of Mr. Dalrymple differ from both Major Rennell's, and from each other; and Captain Hamilton<sup>63</sup>, the only navigator I know who went up to Tatta, has not given any account satisfactory to a geographer; though he has preserved one circumstance which coincides with Ptolemy, assuring us that the natives still call the mouths of the Indus, Divellee, or seven, though they are far more numerous.

<sup>63</sup> Capt. Hamilton, though a very pleasant, does not appear clearly from his narrative, is not an accurate writer; he did not go by water up to Tatta, but conducted a caravan whether he went up on the eastern or western side of the Lari-bundar river; but this will be farther noticed. by land from Lari-bundar to that city. It

These particulars may be of importance to direct the inquiries of future travellers and navigators ; and if they afford but little additional light in regard to the object before us, will plead in excuse of the present attempt to collect all that is known upon the subject. The point necessary to elucidate is the course of the two main branches, East and West, navigated by Alexander ; and to answer this purpose we might assume the Sagapa and Lonibâre of Ptolemy, as the Lari-bundar and Bundar Lari of the moderns<sup>4</sup>. There is something peculiar in this modern appellation, that the same word reversed should be applied to the eastern and western mouth of the same river ; for Bundar is only a Persian term for the mouth of a river, a port, or harbour<sup>5</sup> ; and Lari, or Laheri, is common to both. Not daring, for want of Oriental learning, to ascertain the antiquity of this appellation, I ought to be silent on the subject ; but I cannot

<sup>4</sup> In a translation of the treaty between Mohammed Shah and Nadir Shah, given in Fraser, p. 226, the Mogul Emperor cedes all the country to the West of the Attock, Scind and Nala Sunkra, to the Persians, but the town of Lowry-bundar and all to the East of those streams are still to continue subject to Hindostan. Attock means the higher part of the stream ; Scind and Mehran, the lower ; and as Lohry or Lahri-bundar certainly means the town on the eastern branch, I conclude Nala Sunkra, the canal of Sunkra, to be the proper name for that branch ; for Tatta and its dependencies are ceded to Persia, *i. e.* the whole Patalene.

<sup>5</sup> Or on land, a gate or pass ; *Derbend*, iron-gate on the Caspian.

I imaginé, that in Persick it is properly Bend or Bender ; and that Bundar is a corruption ; but Fraser writes Bundar. The

vowels vary so much, that Tchan, Tchen, Tchín, and Tchun, are equally the first syllable of Chin-ab.

Mr. Jones adds: I confess I have always regarded the etymology of Derbend, to be a different one. I have considered it as being derived from the Persian substantive *Der*, a gate ; *Bund*, the participle of the verb *Busten*, to bind ; that is to say, a place or defile so narrow as to admit of being fortified or shut up by a gate. The erection of Derbend is, amongst many other things, absurdly attributed to Iskander. Alexander.

I believe the word *بندر* Bunder to be a proper Persian substantive, signifying a port. With much diffidence, might not the words Lari or Laheri, when added to the word Bunder, have reference to the kingdom of Lahore. The site of each almost justifies such a supposition.

help expressing a conjecture that the modern Lari-bundar bears some analogy to the Lonibâre<sup>66</sup> of Ptolemy.

These two points to the East and West, modern navigation has nearly ascertained<sup>67</sup>; and one intermediate mouth known by the name of Scindy Bar, and characterised by the Sheik's tomb, is also clearly distinguishable; the others appear like openings that have been viewed by vessels as they passed, rather than examined; and which, from the nature of the coast, probably never approach near enough to determine any point with accuracy; but if the two extremes are sufficiently defined, we shall have data to illustrate the account of Nearchus, and resemblance enough to make Arrian and Ptolemy consistent.

As the works of these several geographers, ancient and modern, will be perpetually referred to, it will not be thought superfluous that their respective merits have been traced. The notice of their general coincidence and particular deviations, at the same time that it conduces to the investigation of truth, will apologize for the deviations themselves.

#### VII. DATES.

NEXT to geographical accuracy, it is an object of importance to fix the dates of the transaction with precision, as the year is mistaken by Petavius, who follows Diodôrus, and the season by Montesquieu, who supposes the difficulties experienced by the

<sup>66</sup> The same sort of transposition takes place in a variety of names, Samydakè, Samykadè; Barada, Badara. Hudson's Geog. Min. vol. i. Marcian. Heraclot. p. 23.

<sup>67</sup> See Major Rennell's Postscript. Richell, Warrell, and some others, appear better known.



fleet to have arisen from the circumstance of performing the voyage during the prevalence of the South-west monsoon.

As there are two departures of the fleet, one from Nicæa, and another from the mouth of the Indus, it will be expedient to ascertain them both; but as the latter is most important, we shall commence the investigation by stating in the words of Arrian<sup>a</sup>, that the fleet took its departure from its station in the Indus on the twentieth of Boedrómion, in the archonship of Cephisodôrus, corresponding with the eleventh year of Alexander's reign. This precision is of consequence, because the list of archons is by no means accurate, and without the addition of the year of Alexander there would still be room for doubt. Dodwell and Usher give a triple series of archons from Diodôrus Siculus, Dionysius of Halicarnassus, and Arrian; and the deduction of Dodwell does not perfectly correspond with Usher. Usher's table stands thus:

## OLYMPIAD CXIII.

<i>Diodorus Sic.</i>		<i>Dionysius Halic.</i>		<i>Arrian.</i>
1. Euthy'critus.	—	Euthy'critus.	—	Hêgemon.
2. Chremes.	—	Hêgemon.	—	Chremes <sup>a</sup> .
3. Anticles.	—	Chremes.	—	Cephisodôrus.
4. Sôsicles.	—	A'nticles.	—	A'nticles.

<sup>a</sup> Τότε δὲ ὤρμητο ἐπὶ Ἀρχοντος Ἀθήνης Κηφισοδώρου ἐκὰδὲ τῷ Βοηδρομιῶνος μηνός, καθότι Ἀθηναῖοι ἄγουν, ὡς δὲ Μαιεῶνες τε καὶ Ἀσιαοὶ ἔγουν, τὸ ἐνδεκάτω βασιλεύοντος Ἀλεξάνδρου. Ar. Indic. 335.

<sup>a</sup> Dodwell differs from Usher, in assigning Arrian's Hêgemon to the year which Usher affixes to Chremes. Arrian, p. 219, says, The battle with Porus was fought in the month

of Munychion, in the archonship of Hêgemon. Munychion answers to April; and therefore as Hêgemon had entered into office the preceding July, April was the tenth month of his year, Ol. cxiii. 1. instead of Ol. cxiii. 2. The year by our estimation is 327 A. C. which answers to Ol. cxiii. but by the different commencement of the Attic year is in reality Ol. cxiii. 1.

The discordance of these authors is so glaring, that after the laborious researches of Dodwell, all attempts to reconcile them may well be deemed superfluous. Let us therefore have recourse to the year of Alexander, which, from a variety of concurrent testimonies, is easily established.

According to Plutarch, Alexander was born<sup>70</sup> in the first year of the hundred and sixth Olympiad, on the sixth day of Hecatombœon, answering to the Macedonian month Lous<sup>71</sup>. This date corresponds, according to Dodwell<sup>72</sup>, with the twenty-sixth day of July, in the year three hundred and fifty-six before Christ. Concerning the actual day, Scaliger<sup>73</sup>, Petavius and Dodwell are at variance; in regard to the year, they are all agreed; and the additional testimony of Usher is a confirmation. Alexander succeeded to the throne, Olympiad cxi. 1. or in the year three hundred and thirty-six before Christ; and according to Usher on the twenty-fourth of September. If

<sup>70</sup> According to Petavius, Alexander

was born, — 356 A. C. Archon Elpînes.  
Philip died, — 336 A. C. Archon Pythodôrus.  
11th year of Alexander, 326 A. C. Archon A'nticles.  
Alexander died July 19, 324 A. C. Archon Hegêsias.

According to Usher, Alexander

was born Sept. 24, 356 A. C. See Usher, p. 185, with his remark on Lous and  
Philip died, — 336 A. C. Boedrômion. See also Dodwell de Vet.  
11th year of Alexander, 326 A. C. Cycl. Dis. iv. sect. 14.  
Alexander died, — 323 A. C. N. B. The year of Christ is not marked in the  
margin of Usher, from the year 328 to 323.

If this should excite a curiosity to examine this subject, there is a Dissertation on the Birth of Alexander in Baron de Sainte Croix, p. 325.

<sup>71</sup> Scaliger does not accede to the synchronism of Lous and Hecatombœon. The discordance is reconciled by others, who suppose that the alteration in the commencement of the Attic year led Plutarch into an error. Dodwell observes with great propriety, that after

Greece became a Roman province, the possible adoption of the Roman calendar rendered the Greeks negligent of their own. Dis. ii. sect. 15.

<sup>72</sup> Dodwell de Vet. Cyclis, p. 721.

<sup>73</sup> Scaliger Em. Temp. 416. August 7.

Usher is right, Alexander was a few months more than twenty at this period, and this is consonant to the testimony of other historians, and the epoch of his death. But if he began to reign in three hundred and thirty-six " before Christ, the year three hundred and twenty-six is consequently the eleventh year of his reign. This is the date Arrian means to establish ; and whether or not he has given the right name of the archon is not very material.

This discussion might have been spared if Diodôrus and Petavius had not stood in the way ; for though Elian labours under a similar mistake, little attention is due to his errors in a matter of chronology. It is surprising that Diodôrus should have anticipated a year, and placed this transaction in the year three hundred and twenty-seven before Christ. It is still more extraordinary that Petavius should adopt his error. It appears at first sight as if Diodôrus had confounded the departure from Nicæa with that from the Indus, but his narrative does not allow this ; and he not only commences, but finishes, the voyage in the year three hundred and twenty-seven at Salmus" in the Gulph of Persia. This was impossible, for Alexander died in three hundred and twenty-four before Christ, and the intermediate transactions from the time he received the fleet near Susa, to the hour of his death, are as clearly ascertained as those of any monarch in Europe who has reigned within a century.

The performance of the voyage, it is true, does not derive its importance from the year in which it was accomplished, how-

" That is, if Alexander ascended the throne on the 24th of September 336 A. C. did not sail till October, the date is consistent.  
the eleventh year of his reign commences on the 24th of September 326 ; and as the fleet " A city mentioned by Diodorus only. Ed. West, p. 243.

ever necessary it may be to support the order of chronology ; but it never could have been accomplished with such vessels as the Macedonians used, if the supposition of Montesquieu were founded, that they sailed against the Monsoon. Fortunately the Monsoons blow in the same season now that they did in the time of Alexander ; and we have the date of the month given us so positively by Strabo and Arrian, that we cannot be mistaken in fixing the departure either from Nicæa or the Indus. Both these authors followed the journals of Aristobûlus and Ptolemy, and the information collected by both is so nearly coincident, that we cannot doubt their veracity ; in fact, there is but one intermediate report between the author of the Journal and ourselves.

Strabo<sup>76</sup> fixes the departure from Nicæa in the year three hundred and twenty-seven<sup>77</sup> before Christ, a few days before the setting of the Pleiades ; an expression obscure indeed, though precise. The ancients had two settings of their constellations, morning and evening, and accordingly Columella<sup>78</sup> says, on the thirteenth or twelfth of the calends of November, (that is, on the twentieth or twenty-first of October<sup>79</sup>,) the Pleiades begin to set at sun-rise ; and a few lines after, on the fifth of the calends of November, (the twenty-eighth of October<sup>80</sup>,) the Pleiades set. The phrase of Strabo is simple, without the addition of morning or evening, which he adopts upon other occasions ; we must therefore apply it to the latter expression of Columella, which is simple likewise ; reckoning, consequently, the setting for the

<sup>76</sup> Strabo, p. 692.

<sup>77</sup> Blair's Chronology does not mention the Voyage of Nearchus, but fixes the war with Porus for 327 A. C. and the departure from Nicæa is in the autumn of the same year.

<sup>78</sup> Col. lib. xi. cap. 2.

<sup>79</sup> 23d of October. Usher in Ephemer. Dias.

<sup>80</sup> 30th of October. Usher. *ibid.*

twenty-eighth of October, and fixing a given number for a few days, we settle the departure of the fleet from Nicæa for the twenty-third of October, in the year three hundred and twenty-seven before Christ.

In regard to the second departure the year following from the Indus, we have the united testimony of Strabo and Arrian with a shade of difference, which, though it might be well to reconcile, is not an object of importance. The date of Arrian is the twentieth of Boedrómion; the date of Strabo is the evening rising "of the Pleiades", and both profess the authority of Nearchus. Strabo's date may be elucidated by observing, as Salmasius informs us, that the rising is the appearance of a star after having been concealed by the sun, and the evening rising is, when it appears in the evening on the setting of the sun. The evening rising of the Pleiades is fixed by Columella for the sixth of the Ides, (that is, the tenth of October,) we have therefore the intended sense of our author exhibited in the clearest light.

Arrian has given us a fixed day with more apparent precision, but with less real information; for it is well known, to the great vexation of every one who has had to calculate the date of any fact connected with Grecian history, that the commencement of the Athenian year is moveable, like our Easter, and may wander through as many days from the same cause, the appearance of a full moon. The full moon next after the summer solstice was the day appointed for the Olympick<sup>31</sup> games, a day probably fixed upon to give the best season of the year, and the brightest nights for the celebration of those games, which were

<sup>31</sup> Ἀνατολή ἐπὶ ἡλίου, ἐπιτολή δὲ ἡ φανέρωσις τῶν ἄστρον, &c. Sal. p. 720.

ἄστρον μετὰ τὴν κρύψιν τὴν ἡλιακὴν. Sal. p. 748.

<sup>32</sup> Ἐσπερία ἐπιτολή ἐστὶν δυνότος ἡλίου ὁρασθῆναι τι <sup>33</sup> See Scaliger Emend. Temp. p. 29. who quotes Pindar and his Scholiast.

the boast and passion of the people. The day on which this full moon was new, was the commencement both of the Olympian and Athenian year, and a year formed on this principle requires perpetual calculations of the moon's changes, whenever a date is to be reduced to the precision of modern chronology. Fortunately for those who are engaged in researches of this kind, the indefatigable Dodwell<sup>a</sup> has given us a series of years which comprehends this epoch. According to his calculation, the third year of cxi<sup>iii</sup> Olympiad, which answers to three hundred and twenty-six before Christ, commenced on the sixteenth of July; and Boedromion, the third month of the year, on the thirteenth of September; the eighteenth of that month he discards, and consequently the twentieth of Boedromion coincides with the first of October. We have already shewn that Strabo's evening rising of the Pleiades answers to the tenth of October, and if we now prove that Arrian's date is the first of the same month, we have an approximation too exact to suffer Montesquieu's error to mislead us, and perhaps as near as, at the distance of two thousand years, can be expected.

Upon referring this question to Mr. Wales<sup>b</sup>, one of the most accurate astronomers of the age, he was of opinion that the precession of the Equinoxes (which had been suspected) was insufficient to account for the error, and likewise expressed his doubts whether the ancients were ever accurate in fixing the rising and setting of their constellations. His doubts were afterwards found to be well grounded; for Salmasius has demonstrated, that in some instances of this kind hardly any two of the ancient astro-

<sup>a</sup> Dodwell de Vet. Cycolis, p. 721.

<sup>b</sup> See Mr. Wales's Answer in the Appendix, No. I.

nomers are agreed. It is possible, however, that Strabo's<sup>66</sup> expression may be laxly interpreted to mean *about* the evening rising of the Pleiades; for, in a similar instance, the morning setting of the Pleiades (November the 8th) is esteemed the commencement of winter; after which it is dangerous to sail; but it is not till the eleventh that the kalendar says, *Maria clauduntur*; we should therefore esteem the rising or setting of the constellations as marking rather the season than the day. If so, there is latitude given to bring him nearer to Arrian: but let the question be resolved as it may, the deviation is so small, that in neither case will it compel Nearchus to perform his voyage in opposition to the Monsoon. As a positive day is given by Arrian, I shall assume this in preference, and on the authority of Dodwell, fix the departure of the fleet from the Indus for the first<sup>67</sup> of October, in the year three hundred and twenty-six before Christ; notwithstanding, the advance of nine days, according to Strabo, would be a more advantageous point to assume.

<sup>66</sup> It appears, upon closer examination, that the Greeks did not reckon the rising and setting of the constellations on the same day with the Romans, for Euctemon computes the evening rising of the Pleiades for the 8th of Dios, that is, the 1st of October. See Usher's *Ephemeris*, where it is added,

<sup>67</sup> Εν τοῖς ὑψίσμασι αἱ φαινόμεναι τῶν Ἀστρον ἐπιτολῇ προλίσσονται. αἱ μὲν γὰρ Ἀθηναῖαι ἀδιωρητοὶ εἰσι

καὶ ἀπαρτήρητοι· αἱ δὲ φαινόμεναι καὶ προλίσσονται, καὶ παρατηρῶνται. Usher from Geminus, p. 61. de anno Solari Maced. ὑψίσμα idem est ac παραπήγμα, i. e. Tabula Ephemeridi affixa.

<sup>67</sup> Usher fixes on the first of October likewise.

<sup>68</sup> See the dissertation on this subject in the Appendix.

## VIII. THE MONSOON.

THE MONSOON\* is a term so familiar at present, that it is hardly necessary to observe, it signifies, in India, a wind that blows six months from the north-east, and six months from the south-west. This wind, unknown in the Great Atlantic and Pacific Oceans, extends, with a variety of inclinations, through all the seas of India from Japan to Madagascar; its general course only is north-east and south-west; its particular deviations depend on the position of mountains, capes, and bays, which sometimes obstruct or direct its course; and near the coast it almost universally gives way to the land and sea breezes, which blow alternately every twenty-four hours. We shall have occasion to notice all these circumstances during the passage of Nearchus from the Indus to Cape Jask, and shall find authorities to support them.

In a collection of papers furnished by Mr. Dalrymple, I have a Journal of Lieutenant M'Cluer, which will enable me to give a better account of the Monsoon in this track, than could have been procured by any other means of information.

"The vessels bound from Malabar to the Gulph of Persia usually make Muscat, on the coast of Arabia; and the best time for making this passage is during the months of November, December, January, and February." This proves that the

\* This word signifies any thing which returns at a stated period, and ought to be written Mousem. Thus the Persians say Mousem-e-Behaur, the Season of the Spring; and Hafez uses Mousem-e-Gul, the Season of the Rose; and Mousem-a-Bulbul, the Season of the Nightingale; Metaph. for the Season at which the Nightingales sing. Mr. Jones.  
 \* M'Cluer, p. 1; and Tavernier, p. 2. vol. ii.



north-east Monsoon, which commences with some fluctuation in October, fixes steadily in November, and continues in force for four months, when it begins to fluctuate again in March, and does not fix steadily to the south-west till April or May. John Thornton says", " In November, December, January, while " the wind is northerly within the tropic, it is easterly along the " coast of Mekran, with a current setting to the westward." And another navigator" in this track says, " Between the latter " end of October and the middle of November, the land and " sea breezes " begin along the coast of Guadel, (Mekran,) and " continue four months." He adds, " If a land wind blows " either morning or evening, a ship may depend on a sea breeze, " or at least a wind along the coast from the north-west, to bring " her in shore again "; neither is the land or sea breeze ever attended with squalls of thunder or rain." Tavernier", who made this voyage himself from Ormus to Surat, mentions, that the passage is made during November, December, January, and February, from Surat to the Gulph of Persia, in fifteen or twenty days.

It has been thought necessary to detail these circumstances, in order to shew that if Nearchus sailed, as he did, at the beginning of October, why it was necessary for him to wait twenty-four days in port, near Cape Monze, (Eirus, or Irus,) till the Monsoon was settled in November; he had then every circumstance in his favour, an easterly wind setting along the coast, a land breeze to give him an offing, without danger of being car-

" P. 71.

" C. Rannie, in Mr. Dalrymple's Collection.

" The sea breeze blows from noon to midnight; the land breeze from midnight till noon. The weather is generally pleasant and

serene in the N. E. Monsoon.

Journal of the Houghton Indiaman, 1756.  
Mr. Dalrymple.

" Rannie, p. 88.

" Tavernier, vol. ii. p. 2.

ried out to sea, no fear of squalls or storms, and a current conspiring with all these advantages to ensure his success.

Whether Nearchus was apprised of all these co-operating circumstances may be doubted ; but there is great reason to believe, that the navigation was practised, at least in detached portions of the voyage, if not along the whole coast ; and we may be sure, if he found at Patala any pilot<sup>66</sup> capable of conducting him, neither his own foresight nor the prudence of Alexander would have been wanting to procure assistance. The general effect of the Monsoon he certainly knew ; he was a native of Crete, and a resident at Amphipolis, both which lie within the track of the annual or Etesian winds, which, commencing from the Hellespont, and probably from the Euxine, sweep the Egæan sea, and stretching quite across the Mediterranean to the coast of Africa<sup>67</sup>, extend through Egypt to Nubia or Ethiopia.

Arrian has accordingly mentioned the Monsoon by the name of Etesian winds ; his expression is remarkable, and attended with a precision that does credit to his own accuracy, and the authorities from which he drew his information. These Etesian winds, says he, do not blow<sup>68</sup> from the north in the summer months, as with us in the Mediterranean, but from the south<sup>69</sup>.

<sup>66</sup> He did find a pilot at Mosarna, which, at the same time it proves a navigation carried on by the Persians, Karmanians, or more probably the Arabians, along the coast, is sufficient to assure us that if a pilot was procurable at Patala, he certainly would have been employed.

<sup>67</sup> A vessel going up the Nile has always in these months a fair wind against the stream. She comes down, by the force of oars, or floats, like a log upon the water. See Bruce, Pocock, Norden, &c.

<sup>68</sup> And in another place ; the Etesian winds, which prevail the whole summer season, blowing from the sea upon the coast, render navigation impracticable, p. 335. The mouths of the Indus front exactly south-west.

<sup>69</sup> This passage of Arrian is accompanied, in the edition of Gronovius, by a long and angry note, as too many of his are. He interprets his author, however, as intending to say, that as the Etesian winds in the Mediterranean blow from the north in summer, and

On the commencement of winter, or at latest on the setting of the Pleiades, the sea is said to be navigable till the winter solstice. This setting of the Pleiades must again cause some confusion, for though Gronovius, in his Commentary on Arrian, fixes this for the eleventh of November, because the kalendar says, navigation ceases on that day; yet Columella places the setting on the twenty-eighth of October, and the morning setting on the eighth of November. We shall prefer, on this occasion again, the setting as expressed simply by both authors, and fix the change of the Monsoon as intended by Arrian for the twenty-eighth of October; a day which coincides so nearly with modern observation, and so identically with the circumstances of the voyage, as to give it a fixed preference to all others. Arrian is not so happy in limiting the termination of the Monsoon to the winter solstice<sup>200</sup>, for it has been already shewn, that it continues to blow during January<sup>201</sup> and February, and does not fluctuate till March; so far is this, however, from impeaching Arrian of ignorance, that it is a proof of his attention and veracity. The fleet reached Karpella before the end of December; Nearchus had consequently no opportunity of observing the prevalence of the Monsoon after the winter solstice; he delivered, therefore, what he knew to be true from his own experience, without considering or knowing what the winds were in January and February; and Arrian copied as faithfully as Nearchus related.

are generally succeeded by an opposite wind in winter, the reverse takes place in the Indian ocean; the summer Etesian is south, the winter north.

<sup>200</sup> Schneider says *πρωτη* should not be rendered solstice but equinox. Indic. c. xxi. but gives no reason.

<sup>201</sup> See B. de Sainte Croix, Note lxii. p. 319, who says, *τὰς πρώτας ἐν χειμῶνι* means the vernal equinox. I should be glad to give this construction, if the Greek language allowed it.

We know from later writers<sup>102</sup>, that the ancients were perfectly acquainted with the nature and seasons of the Monsoon, and that from the time of Claudius, the fleets which sailed from Egypt traversed the Indian ocean to the coast of Malabar, and returned from that coast again, by means of the Monsoons, without confining themselves any longer to the winding of the shore. It is not, however, our object to display the advances made in later ages, but to specify the discoveries of the Macedonians, and the fidelity of the historian; yet we cannot avoid mentioning some particulars that occur in the navigation<sup>103</sup> of the Indian ocean, which bears the name of Arrian, and which, as Dr. Robertson says very justly, deserves more attention than has hitherto been paid to it by geographers. That it is not the work of our Arrian is evident, for the author is ignorant of the extent of Alexander's conquests, whom he supposes to have advanced to the Ganges, when in reality he passed little beyond the eastern mouth of the Indus. His errors, however, are pardonable, if we consider him, as what his works declare him, a merchant, or navigator in the seas he describes; as one who had personally visited both coasts of the Red Sea, the coasts of Africa and Arabia, and the coast of Malabar from the bay of Cutch, possibly to the kingdom of Calecut: that we are authorised to assume this, is evident from a passage where he says, "In sailing down the Gulph of Arabia *we* keep our course in the middle; and, upon another occasion, *we* sail nearer the coast of Arabia." The adoption of the first person seems conclusive, and as his description includes Cape Gardafui, (Arôma-

<sup>102</sup> Dodwell's Dis. on the Periplus Mar. Erythr.

<sup>103</sup> Periplus Maris Erythraei, in Hudson's Col.

tum Promontorium,) Cana<sup>104</sup>, and Cape Fartaque (Syágros,) in Arabia; the departure of the vessels from those points with the Monsoon, the cargoes they carried, the part of the coast they reached; the particulars of the bay of Cutch, (Baraces,) of Cambai<sup>105</sup>, of Baroache, (Barugâza,) of the Ghauts, and the Deckan<sup>106</sup>, with the return from the coast of Malabar by means of the north-east Monsoon; all these indicate a knowledge rather proceeding from observation than intelligence; all prove that he was not a man of letters, but a curious navigator, and a faithful reporter. To pursue this inquiry may be thought an intrusion upon the province of Dr. Robertson, but there is much curious matter in this tract that he has left untouched, and some circumstances have escaped his notice which are matter of surprise. Dr. Robertson has not demonstrated that the Ptolemies had an immediate intercourse with India; he supposes, on the authority of this Periplus, that vessels did pass from the Red Sea by coasting along Arabia and the Mekran to India. I am willing to accede to this supposition upon the same authority, but I have searched for farther evidence<sup>107</sup> in vain; and as Dr.

<sup>104</sup> Cava-Canim, d'Anville; Cape Fartaque, Robertson.

<sup>105</sup> Cambay is at the head of the Gulph of that name, and was a place of high importance when the Portuguese first reached India. It is now sunk under the ruin of the empire, but is properly the emporium of Guzerat, and the English East India Company were rather disposed to put it under their protection, and reinvigorate it in 1794, as I learn from a very curious paper of Mr. Griffith's.

<sup>106</sup> His term is Dachanabades. It is well known that Deckan signifies the south, and the modern Deckan, in the peninsula, is so called because it lies south of the seat of govern-

ment. It is curious to find this name as old as the time of the author. Deckan signifying south, and Abad, a city; Dachanabades signifies the capital of the south. Where to place this is indifferent; as, if we were speaking of modern times, we might doubt whether we should call Poonah, Aurungabad, or Seringapatam, the principal city of the south. The reigning prince took the name of his city or province. The modern Deckan is the country of the Nizam, his capital Aurungabad.

<sup>107</sup> Huet (*Histoire du Commerce*) drops the prosecution of this question at the very point he ought to introduce it, p. 38, and p. 99,

Robertson has produced no other, it is reasonable to conclude that proof is wanting<sup>108</sup>. It is worthy of remark that Pliny<sup>109</sup> says, the course of this navigation was in his own days only beginning to be known, and afterwards that the names of the cities and nations enumerated are found in no author of prior date<sup>110</sup>. It is equally extraordinary that the discovery made of a passage across the Indian ocean by means of the Monsoon, corresponds, in point of time, with this information of Pliny; for Hippalus the author of that discovery lived in the reign of Claudius, and with that discovery it is easy to connect the account of a city called Arabia<sup>111</sup> Felix<sup>112</sup> in the *Periplus*<sup>113</sup>. For the author says, it is near the mouth of the Red Sea on the ocean, and had formerly been the point of rendezvous between India and Egypt, till it was destroyed by the Romans<sup>114</sup> not long before his time. What then are we to conclude? but that the success of Hippalus opened a new channel for this commerce; and that the Romans, like all other trading nations, wished to establish a monopoly for themselves by destroying the

and countenances the opinion I have adopted, p. 313. See also p. 302. 246. Ed. Paris, 1727.

<sup>108</sup> From a passage in Pliny, lib. vi. c. 23, Dr. Robertson lays down a passage from Fartaque (Syagros) to Zizerus, a place somewhere in India; but as neither Montesquieu, Major Rennell, nor Dr. Robertson, can find out where this Zizerus lies, it is a great proof of Pliny's indistinct description of India, which appears upon all occasions. After Dr. Robertson has laboured the point as much as it will bear, he concludes thus: It is probable that their voyages were circumscribed within very narrow limits, and that under the Ptolemies no considerable progress was made in the discovery of India. Sect. 1. p. 37.

<sup>109</sup> Lib. vi. 23. Nunc *primùm* certa notitiâ patescente.

<sup>110</sup> Strabo, however, is of prior date, but a Greek, and perhaps Pliny means to specify Roman authors. Plin. lib. vi. 23.

<sup>111</sup> Thus in the original; but probably a corrupt text.

<sup>112</sup> Huet, *Histoire du Commerce*, p. 302, supposes this Arabia Felix to be Aden; and Aden, he says, signifies *delicæ*, p. 54; in which sense it is applicable to Arabia Felix. Aden is by other Orientalists considered as Eden, the Paradise or Garden of Delight.

<sup>113</sup> Dodwell's *Dissert. in Periplus M. Erythræ*, p. 102.

<sup>114</sup> By Cesar. Which Cesar?

prior means of intercourse? Have we not, therefore, great reason to suspect that the fleets of the Ptolemies went no farther than to these marts in Arabia<sup>15</sup>, where they purchased the commodities of India, and whence they dispersed them over Europe? It is not, however, by this meant to infer, that no vessels from Egypt ever circumnavigated Arabia into the Gulph of Persia, or penetrated into India; for there is great reason to suppose they visited both, and explored likewise the coast of Africa; but the silence of authors, and the little<sup>16</sup> said upon the subject by the writer of the *Periplus*, afford strong presumptions to conclude that these voyages were not frequent<sup>17</sup>; that Indian commodities were chiefly purchased in Arabia; and that the Romans had the good fortune to reap all the advantages from the discovery of Hippalus, to destroy the old channels of commerce, and appropriate the new one wholly to themselves. Two passages of Strabo afford strong evidence of the fact; for in the second book<sup>18</sup> he says, that the knowledge of the Romans commenced with the expedition of his friend Elius Gallus into Arabia

<sup>15</sup> " Their ports of Yemen must have been  
" emporia of considerable commerce between  
" Egypt and India, or part of Persia. Yet  
" we have uncertain proofs of their proficiency  
" in navigation, or even manufactures." Sir  
W. Jones. *As. Dis.* vol. i. p. 138.

<sup>16</sup> The expression in the *Periplus* is remarkable, p. 32, τῶτον δὲ ὅλον τὸν ἱερῆμένον Περὶπλου ἀπὸ Κανῆς καὶ Εὐδαίμονος Αραβίας ἐς μὲν μικροτέραις πλοίοις ΠΕΡΙΚΟΛΠΙΖΟΝΤΕΣ ἵπλειον. The whole voyage was indeed performed from Cana and Arabia Felix, but in vessels of an inferior size, and by a navigation along the coast. This, while it proves that the voyage was performed, demonstrates at the same time the little effect produced from it.

<sup>17</sup> There is a passage in Pliny, lib. vi. 22. which mentions, that in the reign of Claudius, the freedman of Annius Plocamus, who was farmer of the revenues in the Red Sea, while he was going round the coast of Arabia to collect them, was carried out to sea, and beyond Karmania to Hippurus, a port in India; and that the prince reigning there, induced by his account of the Romans, sent an embassy to the emperor. If a voyage to India had been a common occurrence in the time of Claudius, would this narrative assume so much of the marvellous? Pliny adds, that this embassy gave the Romans the first certain intelligence of Taprobana.

<sup>18</sup> P. 118.

Felix ; in whose time an hundred and twenty ships sailed from Myos Hormus ; and in the seventeenth book<sup>119</sup> he adds, that formerly scarcely twenty ships dared to navigate the Red Sea so far as to shew<sup>120</sup> their heads beyond the Straits. Elius Gallus undertook his expedition under Augustus, and if he opened this navigation, the discovery of Hippalus under Claudius established it. The whole of this, indeed, is contrary to Mr. Bruce's system<sup>121</sup>; he has, however, upon this occasion, so much hypothesis, and so little of historical fact, that I am not bound to follow his conjectures, in order either to confirm or refute them. What use the Ishmaelites made of the Monsoon, or how the Ptolemies profited by it, is problematical ; but the discovery of Hippalus is a fact ; and though he is barely mentioned by Pliny, we have a distinct account of him from the author of the Periplus. He informs us, that small vessels had 'formerly made a coasting passage from Cana, near Cape Fartaque, in Arabia, to the Indus ; but Hippalus observing the site of the emporia, and the appearance<sup>122</sup> of the sea, ventured upon a navigation across the ocean at the season of the south-west Monsoon<sup>123</sup>. Since his time, all vessels follow the same track ; they sail for India in the month of July, and return, according to Pliny, in December. This slight mention of coasting voyages, is nearly all the evidence we have of a direct East Indian commerce under the

<sup>119</sup> P. 798.

<sup>120</sup> ὡς τι ἔξω τῶν στενῶν ὑπερκύπτειν, p. 798, and p. 118, δόλῳ παντάπασι θαρσύνων πλεῖν. Few, if any at all, had the courage to sail.

<sup>121</sup> Book ii. chap. 5.

<sup>122</sup> σχῆμα.

<sup>123</sup> Libonotus. Salmasius has a long dissertation to prove, that Libonotus is not south-

west, but west. Had he asked any seaman which way the Monsoons blow in India, he might have saved himself the trouble. D'Anville more sensibly lays it down south-west. This wind, in honour of the man who first had the skill and courage to profit by it, was afterwards called the Hippalus.



Ptolemies ; and it is natural to conclude, that, existing in this manner, it was far more profitable to purchase Indian commodities in the ports of Arabia, than to fetch them from India by a navigation so hazardous and circuitous.

I have been led into this disquisition, however unnecessary it may appear, first, because it seems a point not sufficiently attended to, or noticed by former writers ; and secondly, because it attaches to the voyage of Nearchus in a very extraordinary manner. The coast of the Mekran, (Gadrosia,) which had not been heard of in Greece before the time of the Macedonians, was visited but little on account of commerce, and perhaps not at all, except by the few vessels which performed those coasting voyages just mentioned, and which probably never touched at any port on it, unless from necessity. As late, therefore, as the time of Strabo, that is, at the distance of three hundred and fifty years, no fresh intelligence had reached the writers of Greece or Rome. Strabo gives much the same account as Nearchus ; but a period afterwards arrived, and to all appearance after the discovery of Hippalus, when this coast was again visited ; for Ptolemy, who lived in the reign of Adrian<sup>m</sup>, by residing at Alexandria, had the opportunity of making inquiries upon the spot. Some merchants and navigators evidently in his age frequented this coast, for he does not draw his materials from Strabo, Arrian, Nearchus, or Onesícritus, but exhibits a varied list of names and situations, in the arrangement of which he is followed, with little deviation, by his copyist Marcian of Heraclea. But however some few individuals might furnish information to the geo-

<sup>m</sup> Anno C. 138.

grapher, the discovery of Hippalus now diverted the general course of navigation to the richer coast of Malabar. There was no occasion, and little inducement, to visit the Mekran; and consequently there is a chasm of silence on this subject in almost every geographer, voyager, and traveller, from the time of Ptolemy till the period when the Portuguese penetrated again to this coast of desolation. But though the Portuguese formed settlements in this country, we find little distinct information in their accounts; and if the English East India Company had not directed a survey of this coast to be made, the expedition of Nearchus could not have been properly illustrated, nor the narrative of Arrian so fully vindicated, as it may now be, from the charge of imposture.

## IX. THE STADIUM.

THE application of the circumstances attendant upon the Monsoon, to the voyage under contemplation, has been an easy and a pleasant task; and if it were possible to arrange the measures used by our author, and the distances assigned, with the same accuracy, the journal might be presented to the reader with as much precision as a modern voyage: but no accuracy of this kind is to be expected; the subject surveyed under a variety of lights, and measures examined by most numerous combinations, afford only a general result approximating to perspicuity, but nothing which will satisfy a mind habituated to research, or the curiosity of those readers who consult the margin of their map as regularly as the country it contains.

The determination of local situation, by means of longitude and latitude, is at present conducted with so much facility, and

is so familiar to our apprehension, that we are liable to forget the difficulties to which the ancient geographers were exposed. Narratives and itineraries were the original guides for determining distances and positions: these all depended upon measures, the measures of different countries differ, and the measures of the same country vary in different ages, and in the calculation of different authors. This is so peculiarly the case with the Greek stadium, that it is in some degree indefinite, unless appreciated by the age and country of the author, or reduced by some standard applicable to the country under consideration. It is this measure which Arrian has adopted, with what laxity may be readily seen by consulting Mr. d'Anville's *Treatise on the Itinerary Measures of the Ancients*; and if, by the assistance of that able geographer, some general estimate can be formed, it is such as must be a result from the whole, and must not be expected to apply in every particular instance. Extraordinary as it is to us who live in times when, by means of the press, new acquisitions of knowledge are diffused throughout Europe in the course of a few months, it is a certain fact, that before this communication took place, authors<sup>125</sup> of the same age in different countries knew as little of each other's discoveries as if they had not existed. Arrian and Ptolemy are nearly contemporary, and yet so far is Arrian from manifesting any knowledge of longitude or latitude as applied by Ptolemy to the plane or the sphere, that he seems ignorant even of the parallel of Eratosthenes, though he is an author quoted by himself. He makes but one attempt to mark the course of the fleet, by mention of the shadow falling to the south<sup>126</sup>, and unfortunately the

<sup>125</sup> Gosselin, p. 27.

<sup>126</sup> This will be noticed in its place.

whole track of Nearchus is to the northward of the tropic. But though Arrian has conveyed or preserved no discovery of this sort, he is still a faithful transcriber from his authorities ; the standard measure, therefore, which he has used, we may be assured, is such as he found it in Nearchus, and the valuation of his stadium becomes the object of inquiry. Mr. d'Anville <sup>127</sup> says with great justice, that none of the ancient measures require more discussion than the stadium ; he specifies four different sorts, and these will admit of variations.

				French Toises <sup>128</sup> .		
The Olympian	-	-	-	94	1	
The Pythian	-	-	-	125	or	750 feet.
				Feet. Inches.		
Xenophon's	-	-	-	75	3	7
Aristotle's	-	-	-	51	0	0

The Olympian, or common stadium, is that employed by the generality of writers in the estimation of eight to a Roman mile ; the Pythian is little noticed ; that of Xenophon is taken from the marches of the ten thousand, where thirty stadia are reckoned equal to a parasang ; and that of Aristotle, according to Mr. d'Anville, is the stadium adopted by the Macedonians. It requires great confidence in our guide to acquiesce in this assertion, for no stadium of fifty-one toises is mentioned even by Aristotle himself ; it is extracted from him by inference, and the inference itself is extraordinary. The circumference of the earth was estimated by Eratosthenes at two hundred and fifty-two thousand <sup>129</sup> stadia, which gives seven hundred to a degree ;

<sup>127</sup> Mss. It. p. 85.

<sup>128</sup> as 16 to 15.

<sup>129</sup> The French toise or fathom is six feet, and a French foot is to the foot English nearly

<sup>129</sup> D'Anv. p. 82. Censorinus, Vitruvius, &c.

but <sup>100</sup> Aristotle <sup>101</sup> calculates the same circumference at four hundred thousand stadia. This sum divided by three hundred and sixty produces one thousand one hundred and eleven ; and if we reckon one thousand one hundred and eleven stadia to a degree, the stadium can contain only fifty-one <sup>102</sup> toises. Now the truth seems to require, that we should examine whether Aristotle intended to give a larger world or a less stadium, before we accede to the inference deduced. If, however, we were once persuaded that Aristotle had adopted a stadium of this kind, we might find a philosophical reason for the adoption of it by Alexander ; for his instruction to Beton and Diognétus to employ it in their surveys ; and for our finding it in the journal of his officers. The philosopher was the preceptor of Alexander ; and if he had any hypothesis of his own to establish, by an admeasurement of a new invention, it is not impossible that the pupil might have adopted the system of his master, either from deference to his talents, or from ambition, because it was new.

To confess the truth, when I engaged in this inquiry I regarded lightly the whole of this system ; and though I am not now convinced that any such stadium existed, but rather sup-

<sup>100</sup> Upon examination of this circumference given by Aristotle, lib. ii. c. 14. *De Cælo*, I imagine d'Anville is totally misled ; for before Eratosthenes's attempt to measure a degree of a great circle, all the measures of the circumference of the earth were conjectural. How much all was conjecture may be seen by this very chapter, so far as it regards Thales, Anaxagoras, Anaximander, &c. The stadium, therefore, is not determinable by reducing the measure of Aristotle, 400,000, to that of Eratosthenes's 252,000, for no such measure was

known in the age of Aristotle, but a vague calculation by the Gnomon, &c. &c.

<sup>101</sup> *De Cælo*, lib. i. c. 14. D'Anv. p. 83. See Blair's *Treatise on Geography*, p. 59.

<sup>102</sup> It is extraordinary that Mr. d'Anville, *Mes. Itin.* p. 83, should expressly say, fifty-one toises and a little more ; and that the B. de Sainte Croix, quoting the very passage, should assert, that Mr. D. makes the stadium fifty toises two feet five inches, and then reckon fifty toises without the fraction. *Ex. Crit.* p. 103.

pose that it is a Greek term applied to an Oriental <sup>133</sup> measure, still the general correspondence of fifty-one toises to the measure of Arrian, be it a stadium or not, does, upon the whole, appear reasonable.

I object to all measures of this stadium taken where Nearchus himself did not navigate; and I hesitate about the measure of 3300 stadia from the mouth of the Euphrates to Babylon, stated as the assertion of Nearchus. Indic. p. 357. For that sum makes only 206 miles, whereas it is in reality near 400 miles Roman by the course of the river; and consequently the stadia of eight to a mile are more correspondent.

In order to examine this question more intimately, I extracted all the several distances in Pliny <sup>134</sup>, d'Anville, and Rennell, from the Caspian Straits to the junction of the Jumna and Ganges; and though this stadium would not accord with Pliny, calculated either way, it approached nearer to Major Rennell's distances, than Mr. d'Anville's own, upon the whole extent of the line; and as Major Rennell is the more correct, the coincidence is still more in its favour.

In pursuing the same mode of comparison through the voyage of Nearchus, though it is not possible to establish a proportion of part to part, or perhaps to measure five hundred stadia in any detached portion of the course with satisfaction, yet so far do the errors correct one another, that it would be ungenerous not to acknowledge Mr. d'Anville's merit in the discovery of this principle, however we may hesitate about the application of it, to the minuter divisions of the voyage.

<sup>133</sup> Tieffenthaler reckons by miles, but his miles are cosses, equal to  $1\frac{2}{3}$ ths of a mile. the same?

<sup>134</sup> Great allowances must be made for the incorrectness of Pliny's numbers. What forbids the Macedonians to have done

The distance from the northern mountains where the Indus issues, to its junction with the sea, Arrian estimates, from the account of Eratósthenes, at thirteen <sup>135</sup> thousand stadia; the same space on Major Rennell's map gives by the opening of the compasses somewhat more than thirteen degrees of latitude; we have then at once a thousand stadia to a degree, and may well make up an hundred and eleven more, by allowance for the course of the river, or the march of armies; and if, by the same proportion, we measure from the sea to Nicæa, or Jamad on the Chelum, we find somewhat more than nine degrees, or about six hundred and twenty-five miles English, which, with allowance for the course of the river, we may extend to eight hundred and fifty <sup>136</sup> or even nine hundred miles.

The second distance given is the coast of the Arabítæ from the harbour of Krókala to the river Araba, estimated by Arrian at a thousand stadia, and measuring by Mr. Dalrymple's scale about seventy-five miles.

The third division is the coast of the Orítæ from the river Araba to Málana, one thousand six hundred stadia, according to Arrian, and nearly ninety-eight miles by Mr. Dalrymple's scale.

The fourth division is the coast of the Icthuóphagi from Málana to Badis; that is, from Cape Maran, or Malan, to Cape Jask, which Arrian reckons at ten thousand stadia, but his total and particulars are at variance. Of this coast we have a survey by Lieutenant Robinson, and according to his scale it measures nearly four hundred and eighty miles, a distance more disproportionate to Arrian's stadium than any of his former divisions,

<sup>135</sup> Indic. p. 315.

<sup>136</sup> Major Rennell reckons the navigation up to Moultan at eight hundred miles.

for it differs no less than an hundred and forty-five miles ; the inaccuracy of which we can only excuse on account of the extreme distress of the fleet.

The fifth division is the coast of Karmania from Cape Jask to the island Keish or Katêa ; the number of stadia given by Arrian is three thousand seven hundred, but his estimate is lax, and the deduction from it dubious. The coast measures somewhat less than two hundred and eighty miles English by Mr. d'Anville's scale.

The last measure we can ascertain is that of the coast of Persis ; and even here Arrian's statement of four thousand four hundred stadia must be augmented by an allowance for four omissions, which cannot make it amount to less than four thousand seven hundred <sup>37</sup> stadia, between Keish and the river Endian, the Katêa and A'rosis of Arrian. Mr. d'Anville's scale makes this space equal to three hundred and twenty-three miles, but from the later information of Mr. Dalrymple's charts there is reason to think it not less than three hundred and fifty miles English.

Upon a recapitulation of these several sums, the account would stand thus :

	Stadia.	Miles English.
From Jamad to the mouth of the Indus	10,000	625
Coast of Arabitæ - - -	1000	75
Orîtæ - - -	1600	98
Ichthuóphagi - - -	10,000	480
Karmania - - -	3700	280
Persis - - -	4700	350
	<hr/>	<hr/>
	31,000	1908

<sup>37</sup> It ought to be five thousand eight hundred. See Persis *infra*. But a general estimate only is taken here.



31,000 stadia multiplied by fifty-one toises	-	1,581,000
1908 miles English multiplied by 826 toises.		1,576,008
Difference	- - -	<hr/> 4,992

Of these particulars, the first only is reduced by computation, the remaining five are the actual estimates of Arrian, compared with the measures derived from modern observations ; and when the result is an error less than five thousand upon upwards of a million and an half of toises, the difference is not worth regarding. I am sensible, however, that several of the modern distances are liable to objection, and I lay no claim to precision on this head ; but they were taken in the best manner the charts and maps allowed, without any regard to the issue, and the result permitted to come out in its natural course, without previous accommodation. One circumstance which may appear erroneous, is, in my estimation, the natural means of reconciling the two accounts more nearly to truth ; that is, I have reckoned ten degrees of longitude from the Indus to Cape Jask by the same scale as the other distances, which are in reality degrees of latitude ; whereas a degree of longitude, in latitude 25°, is in fact about sixty-two miles, instead of sixty-nine and an half. The difference which this causes upon ten degrees is not more than sixty-five miles ; but if it be considered that the stadia of Arrian arise from the course of the fleet, while the modern miles are estimated, in some measure, from the opening of the compasses, sixty-five <sup>130</sup> miles upon ten degrees, instead of being an error, is an approximation to truth. Actual precision I affect not, neither do I think the question capable of being reduced to demonstration.

<sup>130</sup> The correction of this distance I owe to the kindness of Dr. Falconer of Bath.

Upon the whole, Mr. d'Anville has performed an essential service to ancient geography, in pointing out a measure of any sort which can enable us to form an estimate of the distances recorded in the journal; and whether it be a stadium of Aristotle, or taken from any standard of the Indians; nay even if it were imaginary, or built only on an analysis of the several measures specified, it is still an object of importance to find this answer upon a space of almost two thousand miles; and that the unavoidable errors which arise upon the reckonings of all navigators, more especially the ancient, can be made to correct each other mutually, and produce a general result which is admissible.

Two considerations arise naturally from the discussion of this subject; the first regards Nearchus, whose estimation rises in proportion, not only to the difficulty, but the length of the voyage. It is no ordinary degree of fortitude which could enable a commander to undertake this expedition in vessels very inadequate to the service, and to explore a coast of this extent, where, if shipwreck were avoided, famine was perpetually to be apprehended.

The second consideration respects the general difficulty of reconciling the measures of different countries; no one has laboured this point with the same diligence and success as d'Anville; and I am obliged to follow his measure in toises, because if I desert it, I can find no guide to direct me; but, in fact, even his measures, however carefully reduced, still leave some obscurity behind.

Since the publication of this work in 1797, the geography of Heródotus by Major Rennell, and the *Periplus* of the Euxine Sea by Dr. Falconer, have been given to the world, both con-

taining dissertations on the stadium. Major Rennell (sect. 2.) expressly combats the short stadium of d'Anville, and consequently all that is here advanced on the authority of that excellent geographer; for he writes, (p. 30.) "The stade of Nearchus, from the abstract of his journal, in parts where we have been able to follow him, is of a standard somewhat longer than that arising from Pliny, for it amounts to 729 to a degree."

I conclude that Major Rennell never honoured my work with a perusal, otherwise he must have seen that there was no part of the journal of Nearchus where we could not follow him, except on the coast of Susiana. I do appeal, therefore, to the statement above, (p. 52.) where I collect 31,000 stadia from six distances given by Arrian himself<sup>12</sup>; and I repeat the assertion, that 31,000 Olympick stadia produce nearly 3650 miles English, and 31,000 of Aristotle's stadia amount to nearly 1914 of the same miles. Which of these two sums corresponds best with the actual measurement of the coast is left to the judgment of the reader.

But Major Rennell's stadium of 729 to a degree is not the Olympick stadium; and he adds, that the Olympick stadium was never an itinerary standard measure of the Greeks, (p. 32.) This is so extraordinary an assertion, when the comparison of the Roman mile with eight Greek stadia is the uniform position of all authors who mention it, that we can hardly conceive on what foundation it is built. But he has tried the Olympick stadium by the intervals between different places, and finds that

<sup>12</sup> The first, in fact, is not given from Arrian, but measured on Major Rennell's map.

it does not correspond; and yet Dr. Falconer has taken the same intervals, and reduced them almost to a coincidence. The fact is, that no road measures are mathematically correct, and all computed distances differ from the standard. This occurs so universally, that the estimated coss in India varies almost as much as the mile in Europe; or if we seek for an example nearer home, we find that scarcely a single town in England stands now at the same nominal distance from the metropolis as it did before the roads were measured.

If the Olympick stadium was not a standard <sup>140</sup> measure, there was no standard in Greece; for the stadium bears a proportion to all the other measures of length, and they must all stand or fall together. Heródotus <sup>141</sup> informs us that

3 inches are equal to	1 palm.
4 palms — —	1 foot.
6 palms — —	1 cubit.
4 cubits — —	1 fathom.
6 feet — —	1 fathom.

600 feet, 6 plethra or 100 fathoms, 1 stadium.

Now 600 Greek feet are equal to 625 feet Roman; and therefore if the Roman foot be ascertained, (as it is,) in obtaining the measure of one we find the measure of all the parts by proportion, and the stadium is as perfectly known as the foot. For this knowledge we are indebted to Greaves <sup>142</sup>, who with

<sup>140</sup> See Rennell's geography of Herodotus, p. 26.

<sup>141</sup> Herodotus, lib. ii. p. 177. Wessel. says, Ἄ, δ' ἑκατὸν Ὀργυαὶ δίκαιαι εἰσι σταδίον ἑξάπλεθρον... Ἐξάπλεθρον μὲν τῆς Ὀργυαὶς μετριομένης, καὶ τετραπλήχιος, τῶν Ποδῶν μὲν τετραπαλάιστον εἶναι τῷ δὲ πλείονος ἑξαπαλάιστον.

<sup>142</sup> See Greaves's Pyramidographia, dissertation on the Roman foot, vol. i. p. 181, et seq. See also d'Anville Mesures Itin. pied Romain, p. 11. The mathematicians who have treated on this subject since, differ from Greaves little more than a thousandth part either way.

geometrical precision determined the measure of the foot described on the tomb of Cossutius at Rome. The result of his inquiry proves, that if the foot English were divided into 1000 parts, the Roman foot would be equal to 967 of such parts, and the Greek foot to 1007 with a small fraction. This proportion makes the Roman foot to the foot Greek as 24 to 25, the stadium of 600 feet Greek equal to 625 feet Roman, and 600 Greek stadia or 75 miles Roman equal to a degree of a great circle.

It is this difference of 25 feet upon 600 which has caused such a variety of opinions relative to the eight stadia attributed to the Roman mile in general, and the eight stadia one-third which, Strabo <sup>143</sup> informs us, Polybius required to reduce the proportion of the mile to that of the stadium.

This difference may be stated under two different processes, which seem to terminate in the same conclusion; for, first, if 600 feet Greek are taken at the usual estimate of eight stadia to a mile, the amount is 4800 feet; but it requires 5000 Roman feet to a mile, for a mile is (mille passus) 1000 paces <sup>144</sup>, and every pace is five feet. Here then is the difference of 200 feet, or the third of a stadium, which Polybius calls the double plethron, and a plethron is 100 feet. Secondly, Let us take this in another form; that is, there are eight stadia in a mile, but the stadium of 600 feet Greek, measured by Roman feet,

<sup>143</sup> Strabo, lib. vii. p. 322. ὅς δὲ Πολύβιος προστιθεὶς τῷ ὀκταστάδι διπλόηρον, ὃ ἐστὶ τρίτον σταδίον. And that he confirms the plethron to be 100 feet appears, vol. ii. p. 511. Ed. Schweig. Τιβύσιος δὲ τῆς σημαίας ἀπομετρεῖται περίξ τῆς σημαίας τετράγωνος τόπος ὥστε πᾶσας τὰς πλευρὰς ἑκατὸν πόδας ἀπέχει τῆς σημαίας, τὸ δ' ἑμῶν

γίγνεσθαι Τετράπλεθρον.

When the standard is fixed, the proper officers measure off 100 feet each way, so as to leave an open square of four plethra.

<sup>144</sup> The passus is the double step; the return of the foot from which you begin to move to the ground.

has an excess of 25 feet, and 25 feet eight times repeated make again the same 200 feet, the double plethron of Polybius, the one-third of a stadium which he required.

The latter process is adopted by Dr. Falconer, and to all appearance gives a full solution of the question. If, therefore, we obtain a perfect knowledge of the Olympick stadium, with its proportion and correspondence to all the other measures; to maintain that one or all of them are not standard measures, is to abrogate the use of all Greek measurement whatsoever.

Major Rennell, however, cannot find that the distances given between various places accord with the Olympick stadium; and by a result from the comparison of eight different authors, he forms an average of 718 feet as the common stadium of Greece. But to estimate the standard <sup>145</sup> by the interval, instead of the interval by the standard, though it is common to most writers on the question, is not the best way of proceeding; for though it is true, that in the Roman provinces where the miles were measured, this process will in general answer, (however, as d'Anville observes, it may fall short of geometrical precision,) still in Greece, where there was no such practice, where if any interval was measured, it was not marked; should the computation differ from the standard, it would not prove there was no standard, but that the computation itself was erroneous. Major Rennell is forced to confess that Heródotus made use of a different stadium for Egypt and the Euxine Sea; but may

<sup>145</sup> In one sense it would always be best to form the standard from the interval; that is, if we could find a precise interval in nature. This is the attempt of Eratósthenes in measuring a degree of a great circle; but his measure was incorrect. It is the attempt also of the Arabian

and European mathematicians; and is now said to be reduced to precision by the French calculators, in order to form a natural basis for all measures. But how their metres, myriametres, and chiliometres, will be adopted by the people is still a matter of experiment.

not the truth be, that in Greece and Asia Minor Heródotus built on his own knowledge and experience, while in speaking of Egypt<sup>46</sup> and the Euxine he had only foreign information for his guide.

It is not, however, ordinary computation alone that is vague and fallacious, for in Greece the disagreement of geometricians themselves is still wider than any result of computation. A degree of a great circle is estimated by Eratósthenes at 700 stadia, and at 500 by Ptolemy ; if the stadia, therefore, be the same, (which they are,) the circumference of the world upon one supposition would be 31,500<sup>47</sup> miles, and upon the other only 22,500.

Between scientific men in modern times the disagreement appears still more extraordinary. The direct distance between Pisa and Athens, on d'Anville's map, according to Major Rennell, is 105 Greek miles. "I have that map now before me," says Dr. Falconer, "and this distance measures upon it 990 Olympick stadia, or 123 Greek miles and three-fourths." Upon such different assertions as these I am not competent to decide ; but I have introduced them for the purpose of shewing how seldom precision is attainable even by men qualified for the attempt ; and consequently, that the measure applied by d'Anville to the journal of Nearchus is to be judged by its approximation, and no strict accuracy to be required.

D'Anville has called this a stadium of 51 toises, or of 111 to a degree. I am ready to agree with Major Rennell that no such stadium was known, and that the inference from Aristotle's

<sup>46</sup> Persę schænos et parasangas alii alia mensura determinant. Pliny, lib. vi. cap. 30. Hard. <sup>47</sup> So Pliny, lib. ii. c. 112. Trecenties quindecies centena millia passuum.

circumference of the world is not founded. I said in the former edition of this work, that I thought it an Indian measure, obtained by Nearchus from the natives at the Indus, or the pilot he engaged at Mosarna. I think so still; and have been disappointed in not finding an equivalent measure in any of the writers on India whom I have consulted<sup>148</sup>. But that such a measure does correspond generally with the *Journal* of Nearchus, I am persuaded; and that it does not correspond with the *History* of Arrian, I have likewise shewn. The reason of this I apprehend is, that in the *Journal*, Arrian follows Nearchus<sup>149</sup>; in the *History*, he takes the usual Olympick stadium like other authors.

M. d'Anville has shewn, that in the gulph of Persia Pliny read the same number of stadia as Arrian found in Nearchus; and that, by estimating these at eight to a mile, he makes the distance nearly double what it is in reality. I can exemplify the same fact at the commencement of the voyage; for we have the distance of ten nautical miles given us between the Laribundar River and Crotchey Bay in Captain Prittie's chart, and this is estimated at 150 stadia by Arrian. Now 150 stadia of

<sup>148</sup> There is a dissertation on Indian measures in the *Lettres Edifiantes*, tom. xv. p. 172. Ed. 1781. But nothing occurs on this subject which is applicable.

Plin. lib. vi. c. 21 or 23. Hard. He gives us likewise 12 miles to Bibaga or Bibactè, and 11 to Toraliba, the latter I have not the means to measure. But all the three prove that Pliny had seen the original journal of Nearchus, as well as the extract from it in Juba; and that Nearchus did record the names of the several stations as well as distances, which in another passage he seems to deny. See Dodwell, and

the following dissertation in this work on the authenticity of the journal.

<sup>149</sup> The short stadium of 51 toises is not correspondent to the distances attributed to the islands of Icharus and Tylos in the Gulph of Persia, visited by Archias; but his voyage is taken from Aristobólus or Ptolemy; it is recorded in the 7th book of the history, and not found in the journal of Nearchus. In this instance, therefore, the usual standard of the Greek stadium may be assumed of 600 feet. See Nearchus, first edition, p. 530.



51 toises produce 7750 toises ; somewhat more than 10 Roman miles. But Pliny, by computing these in Olympick stadia of eight to a mile, calls this interval 20 miles ; that is, if we take the mile Roman at 756 toises, and multiply these by 20, we have 15120 toises, a sum nearly double, or 20 miles instead of 10. Is it not evident then that both Arrian and Pliny<sup>100</sup> read the same number of stadia in Nearchus, but computed them by a different estimate ? I shall have other opportunities of comparing the numbers and distances of Pliny in the progress of the work ; but in this instance the proof is so direct, that I consider it as conclusive, and have no hesitation in subscribing to the stadium of 51 toises assigned to the journal by d'Anville, whether it be considered as a Greek or Indian standard : for however it may fail in particular instances, the errors upon the whole compensate for each other so generally, that the assumption has every probability in its favour. On the coast of the Icthuóphagi, where it corresponds least, the failure is in the excess even of this small stadium ; for the coast is in reality but 480 miles English, and the stadia are 10,000. These at eight to a mile would stretch the account to 1250 miles ; or even at sixteen to a mile, amount to 625, and still have an excess of 145 miles. This is a great error, it must be confessed ; nevertheless it cannot but be increased by a reference to any other known stadium of the Greeks.

I ought not to close this disquisition without noticing the different conception I had of the stadium, from the opinion of my

<sup>100</sup> Pliny reckons indeed his twenty miles from Khrusè and Argurè islands at the mouth of the Indus ; but these islands are either fabulous or misapplied. They seem to come from the Khrusè and Argurè beyond the Ganges.

very learned and friendly correspondent Dr. Horseley, now Bishop of St. Asaph, as appears from the former edition, and which I still retain. For difference of opinion I know he will pardon me; but I cannot pardon myself for inserting his paper on the subject, which was a private admonition, and not intended for publication. It was sent to the printer by mistake, having been mixed with other papers which I received from his Lordship's kindness, and which form the dissertation on the acronychal rising of the Pleiades. Little importance would have attached to this accident, had it related only to myself; for I should have received any communication from his hand as an honour, whether favourable to my system or otherwise: but it has produced a counter dissertation from Dr. Falconer, in his *Periplus* of the Euxine Sea, which I could not see without regret, as being the innocent cause of the controversy.

On the geometrical part of this question I am not qualified to decide. The historical part I have investigated with much attention; and from such lights as I have been able to acquire, I have persuaded myself that Major Rennell has not established his conclusions against M. d'Anville, or those who have followed him. And although that excellent geographer may be mistaken in assigning this stadium to Aristotle, I am convinced that no other stadium known in Greece will apply to the journal of Nearchus; and if it be not a Greek stadium, I know not what measure it can be, unless it be derived from India or Arabia.

X. AUTHENTICITY OF THE JOURNAL<sup>155</sup>.

I SHALL conclude this book with a defence of the journal of Nearchus as preserved by Arrian, which has been condemned as spurious by Dodwell, and impeached in point of veracity by Hardouin<sup>153</sup> and Huet<sup>154</sup>. The supporters of its credit, however, are Salmasius, Usher, Sainte Croix, Gossellin, and d'Anville; and after the mention of their names, if a new apology should be thought superfluous, I must plead the necessity of defending my own opinion independently of others; for if I had thought the work spurious, I would neither have contributed to support an imposture, nor bestowed the labour of years upon the elucidation of a Romance.

But Nearchus has experienced a fate severe in the extreme; he is joined by Strabo with Dáimachus<sup>154</sup>, Megástheneſ, and Onesícritus, as a retailer<sup>155</sup> of fables, in his account of India; and his work has been robbed of its existence, on the authority of Pliny, whose own narrative is far more objectionable. In conducting this charge, Dodwell<sup>156</sup> has not acted generously in prefixing the particular passage of Strabo to the publication of the journal; for as this bears hard upon the veracity of Nearchus, it is prejudging the cause, and ought not to have been introduced without, at the same time, stating the evidence on the

<sup>153</sup> I am indebted to Dr. Schneider of Halle for a very elegant and accurate translation of this Disquisition into Latin, published in his edition of the Indica, 1798.

<sup>154</sup> *Hominis mirare in mendaciis confingendis audaciam.* Hardouin cited by Sainte Croix. *Ex. Critique*, p. 255. See Hardouin's Pliny, lib. vi. c. 26.

<sup>155</sup> Huet *Com. des Anciens*, p. 349. Sainte Croix.

<sup>156</sup> He places Daimachus in the first rank, Nearchus and Onesicritus only in the second. Sainte Croix.

<sup>157</sup> *Παραπαισισ* is the strong expression of Strabo. *Prating nonsense.*

<sup>158</sup> Hudson perhaps, and not Dodwell.

contrary side. Justice required it to be noticed that Strabo has copied this journal as evidently as Arrian, and that he is indebted to Nearchus for many facts which, however extraordinary they might appear in his age, have been confirmed by modern observation.

Arrian, it is true, speaks of an enchanted island, and a miraculous origin of the *Icthuóphagi*; not indeed with a view to assert the truth of such trash, but to refute it; and if Nearchus mentions himself as the only man in the fleet who did not fear enchantment, it may prove his vanity or self-importance; but cannot impeach his veracity.

Two circumstances only occur which can be adduced to support such an imputation; one is, his extravagance in stating<sup>17</sup> the breadth of the Indus; the other, his error in asserting that at Malana, in November, the sun in the meridian was seen to the north. The former may be rescued from the charge of falsehood, by supposing that it relates to the river in a state of inundation; and if the latter admits of no satisfactory solution, it ought not, as standing alone, to be insisted on, to the invalidation of the whole work. Dodwell, in reality, has paid no

<sup>17</sup> This charge falls rather upon Arrian than Nearchus.

I think great caution ought to be used in admitting that an extravagance of description, on some particular points, is a proof of the journal of Nearchus being spurious. Asiatics certainly are not, and I believe the Greeks were not, in the habit of making use of that precision of description to which Europeans are accustomed, and on which they pride themselves. I was present when Meerza Mohammed Hossein, who had been for many years vizier of

Persia, returned to Scherauze from his pilgrimage to Mecca, and was introduced to Luft Ali Khan, the then Prince of Persia. The Prince, amongst other things, questioned the Meerza in respect to Bussora river. The Meerza replied in these words literally: "God save your Majesty. What shall I tell you of Bussora river?—It is like the sea!" Hyperbolic as this was, a man would have been mad to doubt whether or not Meerza Hossein had actually seen the Bussora river. Mr. Hurford Jones.

attention to these two points, but I exhibit them without fear of the consequences.

The Baron de Sainte Croix has drawn out the arguments of this great critic, and subjoined an answer to each; but as the whole charge rests upon a single line of Pliny, if it can be proved that the passage itself is inconsistent with Pliny's assertion in other places, and that Dodwell has not explained it in a satisfactory manner, not only the principal argument, but all the collateral inductions fall to the ground. Sainte Croix proposes to correct it by a different reading, which turns the negative into an affirmative; a liberty, which, though not supported by authority, may be justifiable in regard to a text so corrupt as Pliny's; but I shall shew that it is incompatible; and therefore, if it is incapable of correction, it must be rejected altogether.

The passage in Pliny<sup>138</sup> is this: "The journal of Onesicritus and Nearchus contains neither the names of places where they anchored, nor the measure of distances." Could any one after this suppose, that the following two-and-twenty lines, which comprehend Pliny's extract of the whole voyage, contain little else but the names of places<sup>139</sup>? and these evidently taken, not indeed from Nearchus, nor from the original work of Onesicritus, but from the journal of Onesicritus, published by Juba<sup>140</sup> the Mauritanian.

<sup>138</sup> Onesicriti et Nearchi navigatio nec nomina habet mansionum, nec spatia. Lib. vi. c. 23.

<sup>139</sup> Pliny, in fact, has two different accounts of this voyage; one in chap. xxv. and the other in chap. xxvi. (in Hardouin's edition, book vi.) The first seems to be taken from Nearchus, the second from Juba; and what is more extraordinary, not only the names of places, but

some distances are mentioned in both. I once compared and reconciled them with Arrian, but the discussion is too long for the subject.

<sup>140</sup> Indicare convenit quæ prodit Onesicritus classe Alexandri circumvectus in Mediterranea Persidis ex India, narrata proximè à Juba. Ibid.

Dodwell feels this inconsistency, and accounts for it by making Pliny say, what he never does say, that there was no *uninterrupted*<sup>161</sup> series of names, like that preserved in the itineraries of Antoninus, of the Peutingerian tables, &c. What Pliny found in Nearchus shall be considered presently; but that he found the names of places in Juba's Onesícritus his own text proves; and that some of these places, Tubêrus, Hy'tanis, &c. were *mansiones*, or anchorages, is equally evident. He has given few distances it is true; and whether the journal of Onesícritus contained distances<sup>162</sup> or not, it is impossible to discover; but that Nearchus specified distances appears not only by his work, which in this case is no evidence, but by the testimony of Pliny himself upon several other occasions.

There is in Strabo a passage thrust into his text as strangely as this assertion of Pliny is inconsistent with the tenor of his assertions. "Nearchus says, he could obtain no native guides or pilots in his course from India to Babylonia, because the coast afforded no places to anchor at<sup>163</sup>, or any inhabitants capable from experience, or knowledge of the navigation, to conduct him."

This passage stands insulated between two others, with which it has no connection whatever; and how it has intruded itself here seems unaccountable. It contains, however, an expression which has some relation to the assertion of Pliny: "ὅτι προσόρμους ἔχειν", because it afforded no *mansiones*. What?—not the journal, but the coast; and some expression of this sort has given rise to Pliny's error.

<sup>161</sup> *Itineraria continuis mansionibus, mansionumque spatiis.* Dis. de Arriani Nearchi, p. 134.

<sup>162</sup> *Spatia.*

<sup>163</sup> *Προσόρμους Stationes.* Strab. p. 732.

But let us consider the passage of Strabo. Might not a second Dodwell quote these very words, to prove that Strabo bears evidence against the authenticity of the journal, which records two pilots, Hydriákes from Mosarna, and Amazênes from Oaracta? This would make out a stronger case than Pliny's charge amounts to. But the answer is ready; for Strabo contradicts Strabo. He says here, Nearchus had no pilot; and he says afterwards<sup>164</sup>, Amazênes, governor of Oaracta, was the pilot from that island up the Gulph.

The ignorance of Pliny himself, or the corrupt state of his text, or the vitiated medium through which he received his information, is such, that it is not easy to discover a relation between the account he gives from Onesícritus and that of Arrian's Nearchus. This also forms one of Dodwell's charges. But whether Onesícritus is the cause of this difference, or whether it originates from the intervention of Juba, it is not irreconcilable with Nearchus; for<sup>165</sup>, with some assistance from Salmasius, I read Arbís for Nabrus, Tomérus for Tubérus<sup>166</sup>, Oritæ for Paritæ, Ori gens for Origens, Andanis for Hytanis, Achæmenidas for Achæmedinas, Aradus for Acrotadus<sup>167</sup>, and perhaps Arbís for ab eis<sup>168</sup>. And if I now accuse Pliny of ignorance, or his text of corruption, could Dodwell himself, if he were living, defend him? Salmasius<sup>169</sup> goes still farther; he charges Pliny in direct terms with not knowing the west from the east, and consequently with inverting the order of the tribes on the coast, and he notices a variety of other errors which it is

<sup>164</sup> P. 767.

<sup>165</sup> Krókala and Bibaga or Bibactè are mentioned by Pliny, lib. vi. c. 25. Hard. Evidently from Nearchus or Onesícritus.

<sup>166</sup> In the margin, Tomberon.

<sup>167</sup> Athithradus.

<sup>168</sup> Abies oppidum.

<sup>169</sup> Plin. Exercit. p. 1177, et seq.

not my business to insist on. These are mentioned merely to shew that the credit of Pliny's work ought not to be rated so high as to be made the standard for others, or the test of truth.

Another objection Dodwell draws from the reckoning by miles, which are Roman, instead of the Greek stadium, and which, if Pliny had copied from a Greek work, he would probably have adopted. Whether Juba reduced the stadia into miles, or Pliny, I pretend not to ascertain; but that it is the general custom of the latter, whenever he extracts from Greek authors, his whole work will prove; and d'Anville, with his usual penetration, has shewn in a multiplicity of instances that Pliny never considered any variation in this measure, but that, by reckoning indiscriminately eight stadia to the Roman mile, he has incurred errors that are subversive of all geography. D'Anville has had the curiosity to compare several of these computations by miles with the stadia on which they were made, and the result has been, that as soon as the measure of the stadium in the author copied was ascertained, the numbers<sup>170</sup> of Pliny have been reconciled to truth; truth, of which the writer himself was not conscious.

But Pliny asserts, that there are no measures in Nearchus; and whether he copies his extract from Onesicritus or Nearchus, it is generally without any measure of distances. This may be evidence against Onesicritus, or at least Juba; but is of no weight in regard to Nearchus, whom, however he may cite in other places, he certainly does not copy in this extract. In other passages, he actually cites the distances<sup>171</sup> of Nearchus.

<sup>170</sup> The Olympic stadium being eight to a real distance is often obtained. mile Roman, and Arrian's stadium fifteen, by halving Pliny's measures an approach to the

<sup>171</sup> See Crokala and Bibaga, lib. vi. c. 25.

Hard.



This Dodwell allows ; but then he adds, they were not regular or uninterrupted ; that they did not extend along a whole coast, or all the coasts of the voyage, so that a general estimate might be formed ; this is the sort of measure that Arrian's Nearchus presents, and this is a sufficient proof that the work is not genuine. As a general answer to this, it is sufficient to observe, that this uninterrupted series is an invention of Dodwell's, and we allow that Arrian's work does contain this sort of series ; but a series commencing at the Indus, and extended to the Euphrates, according generally in its parts, and almost perfectly in its total, with the actual survey of the coast, as established by modern observation, contains such internal evidence of its truth, that it is impossible to be invalidated by any hypothetical argument whatsoever.

This ought to suffice ; but I will now adduce the very passages from Pliny cited by Dodwell himself, and make both authors bear evidence against their own system. " Nearchus " says, " that the coast of Karmania extends twelve hundred and fifty miles." And again ; " Onesicritus " and Nearchus write, " that from the Indus to the Gulph of Persia, and thence from the marshes of the Euphrates to Babylon, are twenty-five miles." In another passage : " From the commencement of Karmania to the river Sabis, an hundred miles ; from hence vineyards and arable lands to Andanis, twenty-five miles more." With the account of these distances, corrupted as the text is beyond all conception, I have no concern ; but that measures are specified in each separate instance is apparent, and those the measures of Nearchus. In whatever manner,

<sup>122</sup> Gossellin, p. 25 ; who reads 2500 for 25.

<sup>123</sup> Plin. lib. vi. c. 24. Dodwell, Dis. p. 132.

therefore, the testimony of Pliny is to be adduced, for the purpose of invalidating the journal of Nearchus, that testimony destroys itself; and whether the passage containing it can be interpreted or not, whether it be depraved or correct, whether genuine or spurious, it matters little; for an evidence not consistent is no evidence at all.

Dodwell himself conjectures, that Pliny had seen the original journal of Nearchus, as well as the publication of Juba, because, in the catalogue of the writers whom he consulted, he mentions the name of Nearchus; and from hence it is concluded, that there are no measures in the original, or that Pliny found none; but it has been proved already that, in the abstract of the voyage, Pliny follows Onesicritus; and it is now demonstrated that, upon reference to Nearchus in other instances, the text of Pliny proves the existence of those very distances he denies. Fair reasoning, therefore, demanded the assent of Dodwell to the solution of Usher<sup>174</sup>, who supposes these distances to have existed in the original, and to have been omitted by Juba; and if this supposition will not make Pliny consistent, why is he to be supported? or why is the existence of other authors to depend upon his suffrage?

In constructing this defence of Nearchus, I am supported by Gossellin<sup>175</sup> and Sainte Croix<sup>176</sup>; and had I been acquainted with those authors previous to my own researches, I should have

I quote from the Franckfort edition as Dodwell does; and though I know attempts have been since made to correct these readings, the correction arises frequently from calculation, and not from MSS. I have many corrections prepared; but the object here is to shew the *spatium* of Nearchus, not to correct. See d'Anville, *passim*.  
<sup>174</sup> Anno 4388.  
<sup>175</sup> *Géographie des Grecs*, p. 25.  
<sup>176</sup> *Examin. Critique*, p. 250, et seq.

thought it sufficient perhaps to have adopted their arguments without any comment of my own; as it is, I have been proud of obtaining their concurrence, and upon the revisal of this argument have made use of their assistance without reserve. D'Anville<sup>177</sup> has thought it a sufficient answer to all objections to introduce a part of the narrative itself, and present it to the reader in the same form as the author gives it; and, in fact, the internal evidence of the work speaks more forcibly for itself than all the arguments which can be adduced in its favour. The circumstantial detail of minute facts, the delineation of the coast with the same features it bears at present, the description of manners, customs, and habits, all characteristic of the natives; the peculiarity of the climate, seasons, winds, and natural productions, all bespeak a knowledge which could have been obtained from actual inspection only, and all present a work which Antíphanes, Euêmerus, Iambôlus, Euthymânes<sup>178</sup>, and all the forgers of antiquity could not have put together.

If it were requisite to pursue this inquiry farther, Salmasius affords a copious catalogue of Pliny's errors in regard to the whole coast; and whether those errors arise from the authors he consulted, or his manner of consultation; whether we are to impute them to himself, or to the mutilated and corrupt state of the manuscripts as they came into the hands of his editors; it is impossible that a single passage in such a work should be maintained, in order to depreciate, nay, to annihilate a journal, in which accuracy is as conspicuous as the inaccuracy of Pliny is demonstrable. I shall adduce one proof only, and leave

<sup>177</sup> Sainte Croix, *Ex. Crit.* p. 256.

<sup>178</sup> Impostors enumerated by Dodwell, *Dis.* p. 139, &c.

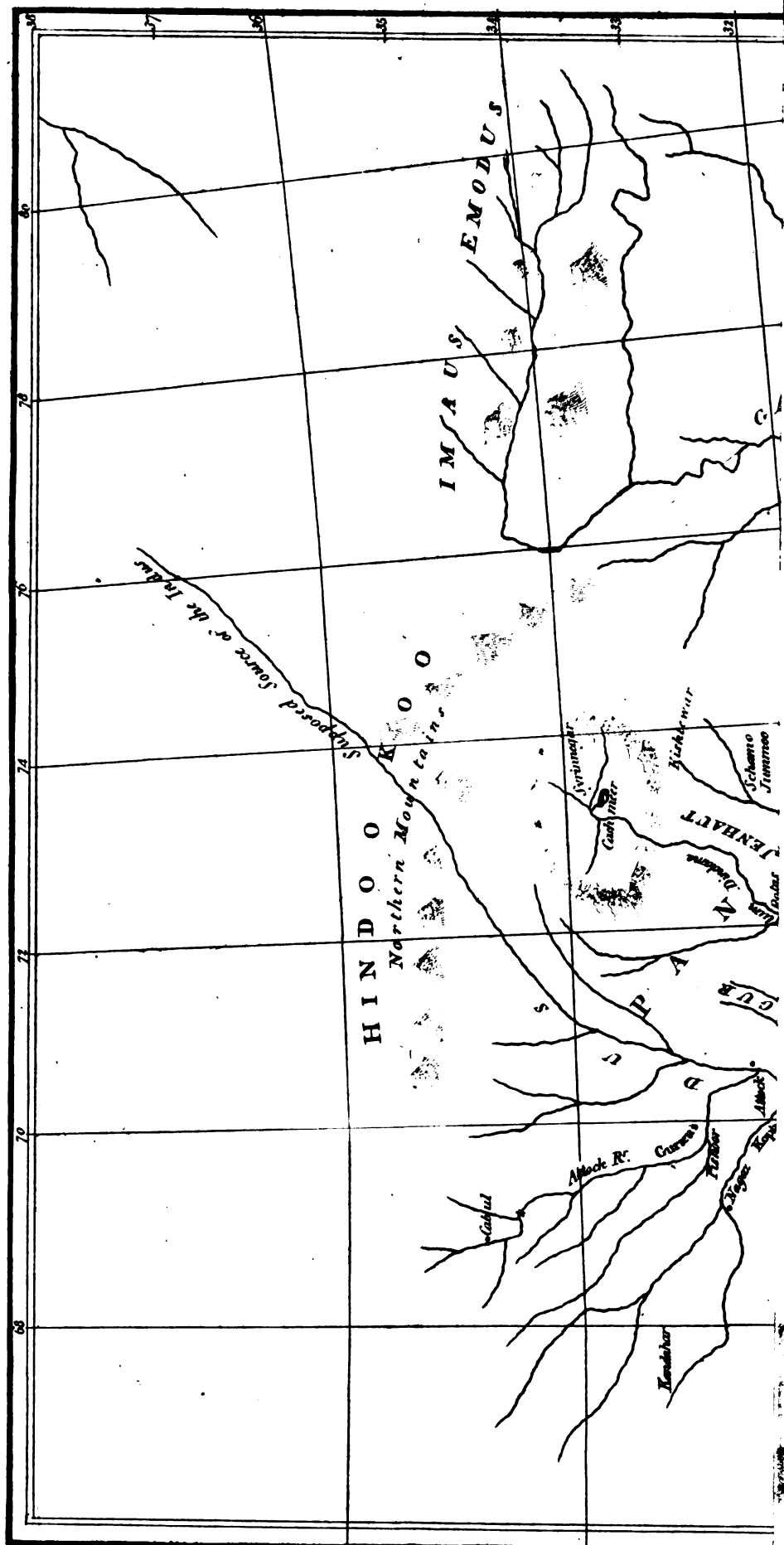
numerous others to the contemplation of those who build systems upon his authority. "The limit"<sup>79</sup> between Karmania and "Armozia is a promontory; but some place the Arbii between them, whose whole coast extends four hundred and two miles." This is his assertion in the twenty-eighth chapter; in the twenty-fifth, he says, *their coast is two hundred miles long*. But whatever its extent may be, it is more than six hundred miles from this promontory, Armozon. Such is the magnitude of this error. On the contrary, Nearchus places the Arbii, or Arabitæ, between the Indus and the Sommean; and a Cape Arabah in the neighbourhood still preserves their name. He says, their coast is about one hundred miles long; and so we find it. He mentions Armozia as a district of Karmania; it continues so to this day. He marks the low tract on the coast and the mountains inland; so do the best geographers and travellers<sup>80</sup> at the present hour. Where there is so much information on one side, and a total want of it on the other, it is not difficult to form a judgment upon the merits of either party.

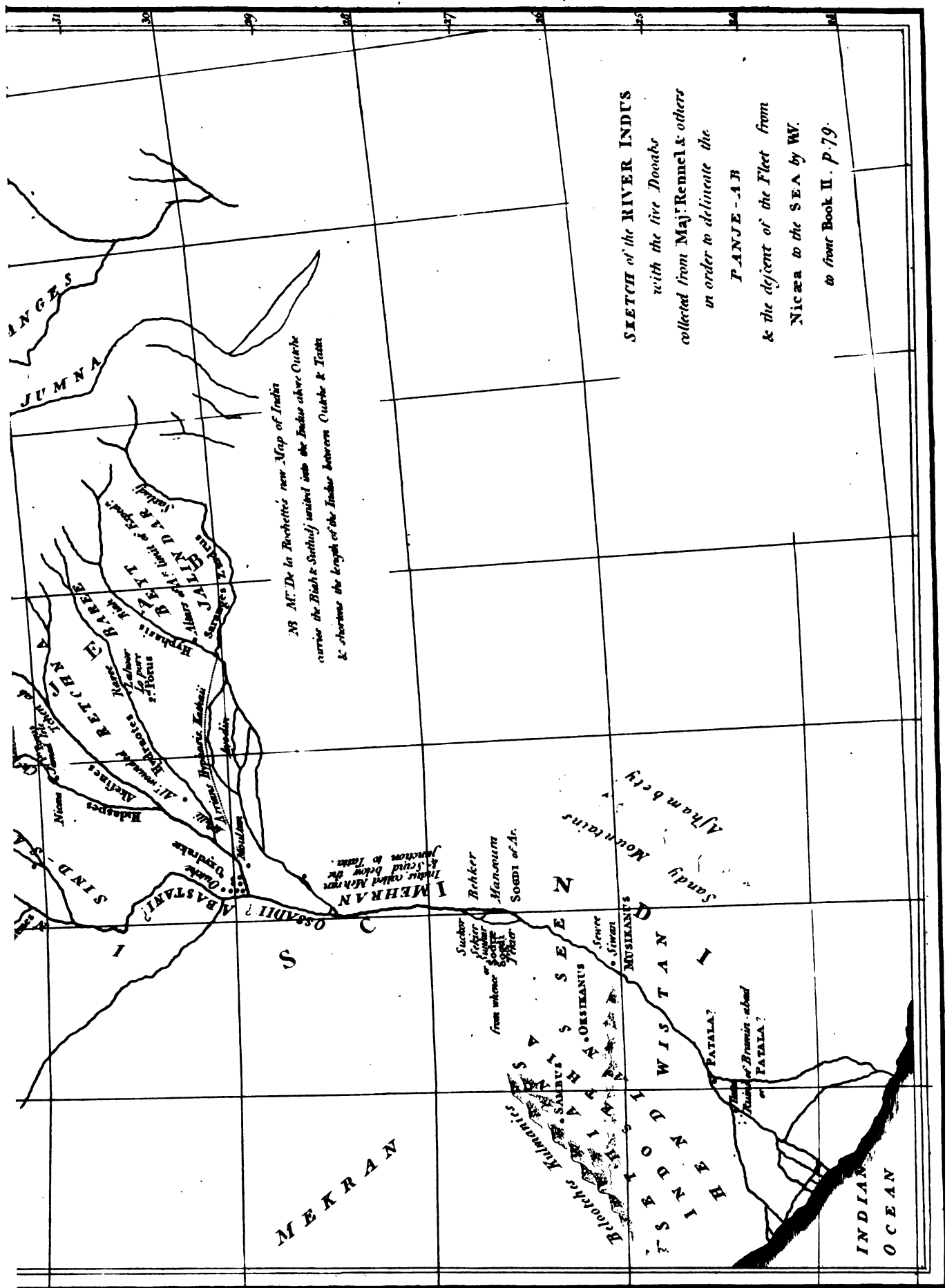
<sup>79</sup> Lib. vi. c. 25. A promontorio Carmanis junguntur Armozei; quidam interponunt Arbios, ccccii mill. pass. toto littore. In margine, ccccxii.

I know not whether I render *toto littore* properly; but it cannot depend on *interponunt*. The chapters are those of Hardouin.

<sup>80</sup> Pietro della Vallé.







THE  
V O Y A G E  
O F  
N E A R C H U S.

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BOOK II.

FROM NICÆA TO THE MOUTH OF THE INDUS.

- I. *Geography of the Panje-ab, or Country on the five Eastern Sources of the Indus ; Wealth of the People ; Population.*—II. *Order of the five Rivers.*—III. *Oxydraca, Malli, Abástani, Ossadii.*—IV. *Sogdi, at Behker.*—V. *Musicánuş, Oxycánuş, Sambus in Sewee, or Sibwan.*—VI. *Pattala and the Pattaléne ; Tatta considered both as a Province and the Delta of the Indus.*—VII. *Progress of Alexander to the Westward.*

THE country denominated the Panje-ab<sup>1</sup>, from the five streams which water it, was, till within these few years, less known in Europe than almost any other of the provinces which compose the Mogol empire ; but the translation of the Ayeen Akbari has at length removed the obscurity, and admitted us into a knowledge of the situation, division, revenues,

<sup>1</sup> Panje-ab ; Rennell. Written also Punge-ab, Penje-ab, by different authors.



and population of the provinces, the geography of the country, and the course of the rivers, with a degree of precision which reconciles the accounts of the best ancient geographers, and corrects the errors of the moderns. To the encouragement given by the East India Company, and the industry and abilities of gentlemen employed in its service, we owe this excellent work, among a numerous collection of others, which are tending fast to dispel the gloom that hung over the mythology of the Hindoos, and the history of their conquerors. And whatever revolutions may hereafter attend our own commerce or empire in the East, these sources of knowledge opened to the world are an acquisition not subject to vicissitude, but will perpetuate the honour of all who have been concerned in the patronage or execution of them, as long as the English language shall be read.

This Register of Hindostan, composed by Abu'l Fazil the minister of Akbar, commented as it is by Major Rennell, will form the basis of the following geographical research; and though it may not be perfectly correct in all its parts, its general correspondence with the classical history of the Macedonian conquests is such, as to establish incontestably the fidelity of Arrian and Strabo; and assure us that we have, in their writings, the report of persons actually partakers in the expedition.

Another work has been consulted, that of Tieffenthaler, a German, and a missionary of the Romish church, long resident in Hindostan, published by Bernouilli at Berlin, and commented by Anquetil du Perron. This missionary evidently possessed the language, and drew from the source of Ayeen Akbari. His

work contains much solid information<sup>2</sup>; but it is so ill put together by the editor, and accompanied with so much other matter not always pertinent to the subject, that it cannot be either read or extracted with pleasure.

From these and other sources of information it appears, that the Panje-ab is still<sup>3</sup> one of the richest countries of Hindostan; and though both its wealth, population, and power are doubtless exaggerated by the Greeks, it is reasonable to allow that they were all superior, at the time of the Macedonian conquest, to any period of prosperity, since the Tartars of different tribes have harassed the country with invasion, or reduced it by conquest. It is not possible to assert that there had been no invasion of this sort previous to the age of Alexander; for in the account<sup>4</sup> of the Kathêi<sup>5</sup> there is evidently a resemblance of Tartar<sup>6</sup> manners<sup>7</sup>, as well as a suspicion, from their name, of a relation to the inhabitants of Kathai<sup>8</sup>; there are likewise instances of Chiefs, not Hindoo, reigning over Hindoos; and the account of several little independent republics, which frequently

<sup>2</sup> The work consists of three volumes. The first contains Tieffenthaler; the second, Disquisitions by Anquetil du Perron; and the third is a Translation of M. Rennell's Memoir, first edition.

<sup>3</sup> Previous to the irruption of Nadir Shah. From that period the Mogol empire can hardly be said to exist.

<sup>4</sup> Rennell supposes them to be the Kattri, or Kutteri tribe.

<sup>5</sup> The Ayeen Acbari mentions a tribe called Kathy, not far from the river Doondy, (*i. e.* in the neighbourhood of Ayodin, and a branch of the Setlej,) who are not Hindoos, but supposed to be of Arabian extraction; whose employment is rearing a breed of horses. They

are perpetually at war with the tribe of Jam, (*i. e.* the Ashambeties to the south, on the eastern side of the Indus,) and they are joined with another tribe called Ajeers. Ayeen Akb. vol. ii. p. 70. 8vo. ed.

<sup>6</sup> Not only in their superior courage, but in their manner of defence, consisting in a triple row of waggon.

<sup>7</sup> They bear one stamp of Indian manners; *i. e.* they burn their widows. Strab. p. 699.

<sup>8</sup> Kathai was a name brought into Europe out of Tartary by our early travellers, who entered that country on the north of Hindostan, and always found a Kitai, Kathai, &c. See Carpin. Rubriques, in Bergeron's Collection.

occurs, bespeaks something that is more characteristic of Tartar than Hindoo policy. Notwithstanding, however, these shades of difference, the aggregate of the tribes appears perfectly Hindoo, from the time that Alexander passed the Indus, till his return to the Orîtaë on the ocean.

It is confessed on all hands that Hindoo policy, both civil and religious, favours population, agriculture, and commerce; and though it will be said, upon the authority of Arrian himself\*, that the Macedonians found no gold in India, if it is a fact, it can only be alleged to prove, not the want of wealth, but of the actual metal. But the fact is suspicious; for the fable<sup>9</sup> of gold turned up by ants proves the existence of gold in the country; and the tribes westward<sup>10</sup> of the Indus subject to Persia, as early as the reign of Darius, paid their tribute<sup>11</sup> in gold. Be this, however, as it may in respect to gold, the wealth of the people in those early ages is self-evident, from works still extant of the most extraordinary magnificence. Their temples, excavations, and public buildings, are not to be seen without astonishment by foreigners; they are by the natives attributed to the agency of supernatural<sup>12</sup> powers, and all bespeak a com-

\* Lib. v. p. 201.

<sup>9</sup> Some modern naturalists have supposed that the white ant, the monster of his genus, if he met with a vein, might turn up gold. But the tale of the ancients must be a fable. Onesicritus saw not the *ant* indeed, but his skin; it was as large as a fox's.

The truth or falsehood of these reports depends upon the animal to which the name is attributed. The term *ant* might have been applied to the ichneumon or armadilla, &c. &c. In no instance is language so vague as in giving names to the animals of other countries, and this even in creatures not rare. *καπρος*, a wild

boar; caper, a he-goat; bouc, a goat; buck, a male deer, &c. &c.: and thus Onesicritus's *ant* may be a very different animal. Busbec. uses the same expression. Among the presents sent to Solymán the Magnificent from the Court of Persia, *was an Indian ant as big as an ordinary dog, a fierce and biting present.* Engl. ed. p. 318. Busbequius's Letters.

<sup>10</sup> Arrian hardly allows the tribes westward of the Indus to be Indian.

<sup>11</sup> Herodotus, lib. iii. p. 246 and 249.

<sup>12</sup> The age of Anakim (as Mr. Bryant very justly styles it), antecedent to all history, still exhibits its magnificence in every coun-

mand both of labour and riches, which can be rivalled only by the illustrious relics of the Egyptians.

This testimony of wealth and power is in all probability long anterior to the age of Alexander, and not in the country visited by him; but in his age, at the sources of the Indus, we obtain such authentic evidence of superior wealth and population, as cannot be contemplated without astonishment. Greece itself was one of the most populous countries of Europe; and whatever country could, from its appearance, suggest to Greeks an idea of superior population, must exceed in this respect all ordinary calculation.

That they did exaggerate in attributing five thousand cities "as large as Cos", to the territories overrun by the Macedonians, is past doubt; yet that the view of the country itself suggested this exaggeration is likewise manifest. But let us consider the country of Pôrus at the time it was invaded by Alexander, and before the enlargement of his power. It consisted apparently of what the Ayeen Akbari calls the Doo-ab<sup>16</sup> of Jenhat, or the tract between the two rivers Hydaspes and Akesînes, not more than forty<sup>17</sup> miles wide at a medium, and from an hundred to

try where it is sought for; from the Pyramids of Egypt to the Druidical masses in Britain.

If we attribute their works to natural power, their numbers are incredible; if to mechanic power, their knowledge is equally incomprehensible.

<sup>14</sup> A queen of Gurrah (a part of Orissa), named Durgetti, had a territory 300 miles in length by 100 in breadth, in which were 70,000 towns and villages well inhabited, and which had never fallen under a foreign yoke.

Dow's Hindostan, vol. ii. p. 262, 8vo. ed.

If this does not exceed all that *Grecia mendax audet in historia*, never believe Fenishta.

Such were the accounts the followers of Alexander copied of provinces they never fully explored themselves. 300 by 100 miles gives 30,000 square miles. In Gurrah, therefore, there must have been a town and a village upon every square mile, with a surplus of 10,000. See an account of Treasures, p. 266.

<sup>15</sup> See supra; and the extraordinary reading in Pliny. Cominus for Co minus.

<sup>16</sup> Doo-ab, two rivers or waters.

<sup>17</sup> Strabo says it contained three hundred cities! Lib. xv. 698.

an hundred and fifty miles long. Out of such a territory as this, without <sup>18</sup> allies, Pôrus raised an army consisting of four thousand horse, three hundred chariots, and thirty thousand foot, under his own command, besides an advanced party under his son, of an hundred and twenty chariots, with two thousand horse, making at the lowest, with due allowance for those employed about the chariots and elephants, forty thousand <sup>19</sup> men. And if we now compare this force with the country which was to raise, support, and maintain it, what judgment ought we to form of the population of India? Pôrus <sup>20</sup>, however, was only the head of one out of many tribes in this country of the Panjab; Abissâres, a powerful Chief, lay on the north; the Glausæ, on the east; a second Pôrus, on the Hydraôtes or Ravee; and the Kathêi lower to the south, between that river and the Hyphasis: adjacent to these, Sopîthes; with the Malli towards the mouth of the Hydraôtes; and the Oxydracæ, at the angle between the Akesînes and the Indus; besides the Abâstani and Ossâdii, for whom we can hardly find a site.

Small as the territory of these several tribes must have been, the numbers recorded of those who submitted, who were slain or subdued, excites our incredulity at every step; and little remains but, after due allowance for exaggeration, to admit a population of the greatest magnitude possible.

<sup>18</sup> Embisârea; the Abissâres of Arrian was to join him, but failed. Diodor. lib. xvii. p. 229.

<sup>19</sup> Diodôrus says fifty thousand. Ibid.

<sup>20</sup> Pôrus at the moment of Alexander's invasion was preparing to invade a neighbouring province himself.

The historians suppress this, while they brand Alexander as a robber: but Pôrus acted only in obedience to the laws of his country and his religion; for Menu says, "The pe-

culiar duty of a Sovereign is conquest," p. 204.; and suggests the various modes of conquest by arms, by fomenting divisions, by fraud, &c. &c. &c.

Does not this maxim justify every invasion of India, from Maghmud of Ghizni to Lord Clive? When modern French philosophy proclaimed the age of reason and universal peace, what else was it meditating but universal conquest, plunder, and rapine?

Numbers to this extent, surpassing those of Greece, and equalling those of China", depended, as far as we can judge, not upon that abominable practice of exposing children, legalised<sup>22</sup> in both those countries; for this is a system that seems never to have entered into the conception of Indian legislators, civil or religious. Existence, however lightly prized by Indian principles<sup>23</sup>, appears to have multiplied<sup>24</sup> faster by the mildness of government, security from oppression, and the encouragement

<sup>22</sup> The population of China calculated at two hundred and forty millions by P. Mailla, and that of Japan by Kæmpfer and Thunberg, may make us indulgent to the extravagance of the Greeks. If the cities and towns of China stand as thick throughout the empire, as on the canals navigated by the English, from the Yellow River to Peking, it does not appear how there can be space for agriculture to feed them. See *Æneas Anderson*. See also the accounts of the Jesuits in Du Halde. *Lettres Edifiantes*, &c. &c.

Mr. Barrow, in his account of China, has disapproved the authority of *Æneas Anderson*, and adds, that he himself did not know of any law in China to authorize the exposition of children. What I have asserted in regard to the law, I had from an East India Captain, (I think) Captain M'Namara, who fell at St. Salvador. But if there be no law to prohibit it, it is sufficient for my purpose. In regard to the authority of *Æneas Anderson*, I considered him as a writer speaking from what occurred to his own imagination. The magnificent work of the embassy was not then published. Sir George Staunton has enhanced the population of P. Mailla; and I still think the feeding of the Chinese nation more wonderful than the number of inhabitants.

<sup>23</sup> In Greece a parent was allowed to expose every child; in China every female, and every

third male. The legislators seem to have removed the obstacles to marriage, by holding out an immunity from the burden of a family, and to have trusted to the affections of nature for rearing one. This policy appears to have answered in these two instances. But population is not to be purchased by outraging nature, however anxious all legislators may be to promote it.—I ask pardon,—not all. For the legislature of France has discovered that population may be too great, and has in consequence taken effectual measures to diminish it. The discovery is imputed to Mirabeau.

M. Billecocq, the excellent French translator of this work, has, with a degree of patriotism that is laudable, condemned the author for this note. I cannot now bring the charge home to Mirabeau; but I am certain that I had read it at the time, and that it is not a calumny of my own invention. But that the principle was French I can still prove. *Carrere souhaitoit que la France seroit reduite a un quart de sa population. Mercier Tableau de Paris, tom. i. p. 144. Ed. 1800.*

<sup>24</sup> It is an Hindoo sentiment, that rest is better than action, sleep better than rest, and death best of all.

<sup>25</sup> A Bramin cannot retire to the woods; *i. e.* become Hylóbius or Jogee, till he has given children to the community. Laws of Menu.

of maxims political and moral, than by any of those infringements on the law of nature ; and though perhaps too much is always imputed to the purity of remote ages, and we value too highly systems, the defects of which we can no longer discover, it will not be thought unreasonable to attribute great effects to Indian policy and manners, and still greater to the security of life and property : in ancient times at least, these were as complete in practice as the theory appears in the Gentoo code, or the institutes " of Akbar. To this it may be objected, that a tribe of military forms one part of the Hindoo system ; and that war implies oppression. Against this, however, the same code provides a remedy. The produce of the field, the work of the artisan, the city without walls, and the defenceless village, are declared sacred and " inviolable ". Those only who used the sword were to perish by the sword. I find in Bernier one instance of this Hindoo law reduced into practice by the Mahomedan family still reigning ; which occurred, when Aurungzebe " was contending with his brothers for the empire. If I could have found in ancient history that the practice and the theory were in unison, I should have thought it a sufficient ground to

<sup>25</sup> The mode of letting the lands and fixing the tribute is one of the most curious ordinances in the Ayeen Akbari.

<sup>26</sup> Strab. lib. xv. Dod. Sic. lib. ii. tom. i. p. 150. Paolino. 227.

<sup>27</sup> See also Arrian Ind. p. 325.

<sup>28</sup> Had the civil war and rebellions, which with very little intermission have raged in Persia from the dethronement of Shah Sultan Horein in 1721 to the present hour, been carried on according to the custom of such things in Europe, the country must have been now nearly depopulated. On the contrary, within

my own immediate notice, that is to say, during the fierce competition of the Zund and Khajar families, when the chief of the former was in possession of Scherauz, and the chief of the latter in possession of Ispahaun, coffas or caravans, and immensely valuable ones, were constantly journeying between the two cities ; the property and person of the Scherauz merchant was perfectly safe at Ispahaun, and the merchant of Ispahaun and his goods were equally secure at Scherauz. Mr. Hurford Jones.

account for the wealth and population of the richest nation upon earth. To prevent war is impossible; but to strip it of its terrors by adopting something similar to this, as a law of nations<sup>29</sup>, is a subject for the contemplation of the legislator, of the philosopher, and of every individual, moral or religious.

I have entered upon this discussion in order to vindicate the classical historians from the charge of falsehood, by accounting in some measure for the numerous tribes with which this country swarmed. Another cause of this may be found in the nature of the country itself; for the five streams which water it are navigable, during the summer season at least, a thousand miles<sup>30</sup> from the mouth of the Indus; and the Chelum or Hydaspes is said to extend this navigation two hundred miles higher into Cashmeer, from which province there is a communication with Thibet, Boudtan, and Tartary.

The western sources connect with Candahar and Cabul; but as these are not our concern at present, it will be sufficient to notice that Lahore on the Ravee, the principal city of the Panje-ab, was the centre<sup>31</sup> of an immense commerce between that country and Dehli; and that one of the more eastern branches either did communicate<sup>32</sup>, or was intended by Fe-

<sup>29</sup> This was a favourite idea of Dr. Franklin's, who obtained some articles of a similar tendency to be introduced into a treaty between America and Prussia. Unfortunately for the theory, they are two nations least likely of all others to try the effect practically.

We no longer eat our conquered enemies, like the New Zealanders or native Americans; we do not murder them, like the Lacedæmonians; or reduce them to slavery, like the Romans. Increasing knowledge, mutual fears and conveniences, morality and religion, have

contributed to abolish these practices. What great refinement of speculation is there in carrying this system still farther?

<sup>30</sup> Ten degrees, by the opening of the compasses, from the mouth of the Indus to the southern mountains of Cashmeer. Rennell makes it, by the river, eight hundred miles to Moultan. By the same estimate, we might reckon four hundred to Cashmeer, and two hundred above the mountains.

<sup>31</sup> Previous to Nadir Shah.

<sup>32</sup> Rennell.



roze III. to communicate, by means of a canal, with one of the sources of the Ganges; and must have formed an inland navigation not exceeded perhaps by those of China. These circumstances are sufficient to prove the commercial spirit of the country; and, in consonance with this, Abu'l Fazil informs us, that forty<sup>33</sup> thousand vessels were employed on the Indus, which, even in the decline of commerce, are said by Captain Hamilton to be two<sup>34</sup> hundred tons burden, and the most convenient he had seen for the accommodation of the passenger and the merchant.

If such has been the state of commerce<sup>35</sup> under the empire of the Mahomedans, it is but reasonable to assume a much more flourishing appearance of it in the early ages, while the Hindoo policy was in full vigour, uninterrupted by foreign intruders, and unremitting in its encouragement and protection of the people. The population is one proof of this, and the fleet collected by Alexander is another. The wealth<sup>36</sup> he accumulated from his conquest is no where specified; but Maghmoud<sup>37</sup> the

<sup>33</sup> Tavernier, Thevenot, Goetz, Bernier, Tieffenthaler, Rennell, &c. &c. all unite in testifying the magnitude of this commerce.

<sup>34</sup> By Mr. Griffith's papers, it appears that vessels of forty or fifty tons only could now be navigated; a proof that the commerce has declined, and that the river partakes of the deterioration of the country.

<sup>35</sup> The soobah of Lahore is very populous, highly cultivated, and exceedingly healthy. Ayeen Akb. p. 32. vol. ii. or p. 111. Lond. ed. The revenue is 559,458,423 dams, which, at forty dams to the rupee, is equal to 1,748,307 l. sterling, from a country about three hundred and forty miles long, and one hundred and sixty in breadth.

<sup>36</sup> There is a passage in Q. Curtius and

Athenzus which describes three hundred beasts in the train of Alexander laden with treasure, in which it appears as if the conqueror had carried with him the plunder of Persia out of mere ostentation. But if this assertion has any foundation, it ought to be the conveyance of the Indian treasures; a circumstance similar to the accounts of Nadir Shah. This fact, however, as supported by no historian of credit, is utterly dubious.

<sup>37</sup> The site of Glazna has been determined only within these few years by Mr. Forster. See Rennell's Mem. p. 114. And from its proximity to Paropamisus, the mountains of Candahar, his army probably consisted of Aghvans, the same tribe that put an end to the Dynasty of the Sefis in Persia, so late as one thousand seven hundred and twenty. The

Ghaznavide tyrant, the earliest Mahometan invader of whom we have an historical account, is represented as enriched with such an enormity<sup>3</sup> of plunder as to make the ravages of Timour and Nadir Shah appear moderate.

The revenue of all these provinces or soobahs, as settled by Akbar, is exhibited in the Ayeen Akbari; but large as they are, both essentially and relatively, they appear reasonable in comparison of the ancient accounts, whether Greek or Hindoo; and these accounts, though exaggerated, have doubtless some foundation in fact. All these provinces were overrun by the Macedonians, except Cashmeer<sup>4</sup>, the paradise of the Hindoos, consisting of a large valley in the northern mountains. But Lahore, Moultan, and Tatta<sup>5</sup>, which form the modern soobahs, are the scene of those transactions we are now to enter upon. That we may display these in their proper light, and be enabled to follow the operations of the fleet, it is necessary first to shew the series of the rivers which Mr. d'Anville has mistaken<sup>6</sup>, and which must be reduced to order before a

commander of that invasion wrote his name also Maghmoud like the Ghaznavide; it is probably the provincial dialect for Mohammed.

Shah Mahmoud of Ghazna spelt his name different from the name of Mohammed. They are two distinct Mussulman names: Mahmoud; Mohammed. Mr. Jones.

But they are not distinct according to Abu'l Pharaj, p. 104.; for Mahmud and Mohammed both signify Laudatus.

<sup>3</sup> Maurice.

<sup>4</sup> Abissares is supposed by M. Rennell to be the Chief of a tribe in the northern part of the Doo-ab of Jen-hat, called Kakares. But there is a Hansy-Hissar mentioned in an incursion of the Abdallies, somewhere near Lahore. India. An. Reg. 1799. Characters, p. 19.

Iswara signifies *King*, according to Wilford, As. Res. iv. p. 380, and Ab-Iswara would be a king of a Doo-ab; but Mr. H. Jones derives the name from Abou-Shar, which signifies Father of the city. This, however, is Persian. The whole of this is mere conjecture I allow; but as the initial Ab intimates his territory to be on a river, by searching for the etymology of *Issar*, I am satisfied his residence would be discoverable.

<sup>5</sup> Tatta was united with Moultan by Akbar.

<sup>6</sup> There is no real authority but Rennell's Persian map, the Ayeen Akbari, and Cherefeddin. Fraser, Hanway, and Jones's Nadir Shah will afford little assistance to an inquirer. Hanway is total error.

N

90 COURSE OF THE FLEET DOWN THE INDUS.

clear view of the expedition can be obtained. In the performance of this service, I follow the authority of Mr. Rennell, not merely by retailing his Memoir, or commenting on his Map, but by shewing that our ancient authorities are consistent with truth.

II. PANJE-AB, PENJ-AB, OR PUNGE-AB.

THE five rivers of the Panje-ab, which fall into the Indus, are in their order commencing from the west, the Hydaspes, the Akesínes, the Hydraôtes, the Hy'phasis, and the Saranges. Besides these, Arrian, from Megásthenes, brings the Sínarus into the Hydaspes, the Tóotapus into the Akesínes, and the Neudrus<sup>42</sup> into the Saranges; but of these two last he professes to speak with diffidence, as they were not seen by the Macedonians; and the Sínarus and Tóotapus are mentioned no more. Of these five streams the Akesínes is the principal, being joined by the Hydaspes on the west, and by the Hydraôtes from the east, receiving also (as Arrian asserts) both the Hy'phasis, Saranges, and Neudrus, from the east, before it falls into the Indus. Ptolemy causes no small confusion, both to his commentators, and to Mercator who has framed his maps, by giving the preference to the Hydaspes, and making the name of that river prevail over the others. But Arrian maintains the honour of the Akesínes, asserting expressly, that all the others lose their name on uniting with him; and that he preserves this pre-eminence till he joins the Indus. This is the more probable, because the modern Chen-ab, his representative, claims the same privilege<sup>43</sup> to the present day.

<sup>42</sup> It is not quite evident whether into the Saranges or Akesínes.      <sup>43</sup> Tieffenthaler. Ayecan Akbari.

But if Ptolemy is mistaken in one particular, he is in harmony with Arrian and Strabo in giving the same series or succession ; and Pliny, who drops the mention of some intermediate streams, has nothing contradictory to their order. In this respect, therefore, ancient geography is uniform ; and if the moderns dissent, either from one another or from consistency, we must impute their mistake to that abundance of appellations which all these rivers severally obtain, either in different parts of their course, or from being mentioned by various names in various languages, Mogol, Toorki, Persian, or Hindoo.

The Hydaspes is the first in order, corresponding with the modern Chelum, and flowing between the Indus on the west, and the Akesines on the east. The variety of names cannot be better exemplified than in this instance. Ptolemy will serve however, not less upon this occasion than on all the others, as the point of connection between the Macedonian orthography and the Sanskreet, dispersing light on both sides, and shining himself like a luminary in the centre.

Hydaspes,	—	Arrian, Strabo, Pliny, &c. &c.
Bidaspes,	—	Ptolemy.
Bedusta,	—	Sanskreet, according to the Ayeen Akbari.
Vetasta,	—	Sanskreet, Tieffenthaler.
Dindana,	—	below the mountains of Cashmeer, Tieffenthaler.
Chelum,	—	Persian or Mogol, Cheref-eddin.
Zalam,	}	Forster, &c.
Jalam <sup>4</sup> ,		
Djalam,		

<sup>4</sup> It rises at Islam Abad. Forster, vol. ii. p. 5.

The Kishen Gonga is seen near Mussuffer Abad by Forster, and he is informed it falls

Zeloom,	—	between Aurungabad and Rotas, Tieffenthaler.
Jamad,	{	from an island so named in one part of its course, Tieffenthaler.
Behut,	{	Hindostani, Ayeen Akbari, Behat. Herbert, p. 70.

Such is the catalogue, consisting of twelve " names for a single stream, and sufficient to account for any error in consequence of their variety ; but Zeloom, Zalam, Jalam, Djalum, Chelum, are the same sound confused by the Persian Dj. Dindana is a name in one part of its course, and Jamad in another. Behut is the appellation used by the Mogols; evidently connected " with the Bedusta or Vetusta of the Sanskreet, the Bidaspes or Hydaspes of the Greeks, all dependent on the relation between the vowels A and U in Oriental orthography, or on the connection of the consonants B and V with the aspirate.

This stream is made the Indus of Arrian by d'Anville<sup>46</sup>, and vitiates his whole series in consequence. But it is too clearly

into the Jalam. Rennell carries it into the Indus. Forster, vol. ii. p. 40. A stream called Nah, west of the Kishen, falls into that river, p. 41. : but these junctions are above the route of Alexander.

<sup>45</sup> La diversité que l'on remarque dans les differens auteurs, ou écrivains, où il est mention de ces rivières, a de quoi étonner, et n'est pas une médiocre embarras pour qui-conque veut débrouiller cette matière. Differens noms à la même rivière ont contribué à y mettre de la confusion. Eclaircissemens sur la Carte de l'Inde, p. 28.

See, in consequence, the error of this great geographer. In the same page he says, the

Shantrou succeeds the Tchen-av; and afterwards, the lower part of the Shantrou bears the name of Jamad, from an isle of that name in the river. Now in reality the Shantrou and Tchen-av are the same, and Jamad the isle is in the Hydaspes, or Chelum.

<sup>46</sup> All sounds received by the ear, and committed to writing, differ. What is more apparently different than the French Taiti and the English Otaheite? Compare them, and the resemblance is clear. Ta-ee-tec, o-Ta-hec-tec.

<sup>47</sup> And carried into the Attock, which is the real Indus, without joining the Akesinea. See his Map, Asie, 1. Partic. et Antiq. Geograph.

defined by the Ayeen Akbari to admit of any future error. According to that register it rises in Cashmeer, and is navigable by vessels of two hundred tons quite up to Syrin-nagar, the capital of that province. Where Arrian would bring his Sínarus into this stream, whether from the east or west, whether within the limits<sup>4</sup> of Cashmeer, or below the mountains, is undiscoverable; but his authority is from Megástheneſ, and not from the Macedonians. Neither knew any thing of Cashmeer; and yet in Sínarus I think that I trace some relation to the Syrin-nagar<sup>4</sup> river, as it is called, within the limits of that province. However this may be, the river, after passing the mountains and descending to the Pergumnah of Shoor, joins the Akesínes or Chen-ab, and twenty cose<sup>4</sup> lower receives the Ravee, or Hydraôtes, at Zufferabad; when the three streams united, after a farther course of sixty cose, form a junction with the Indus at Outche, the Oxy'dracæ of the Macedonians. This is the ac-

<sup>4</sup> It should rather seem below the mountains; for he says, in *Oxydracis*, Outche. But there is no river there but such as we are acquainted with.

<sup>4</sup> Nagar, nagur, nagoor, is a general termination, like poor, patam, &c. as Chander-nagur. Syrin-nagur is therefore the town, fort, or city, on the Syrin.

Syrin and Sinar, Sinar-us, approximate sufficiently; but the mention of the Oxy'dracæ seems adverse to the conjecture.

<sup>4</sup> The principle of the cose is found in the Ayeen Akbari, vol. ii. p. 213. The breadth of eight barley-corns husked

makes	—	1 inch.
24 inches	—	1 cubit or dust.
4 dusts	—	1 dund.
1000 dunds	—	1 cose.
4 cose	—	1 jowjun.

4.

But the cose varies in India, as the mile or league in Europe. The royal cose is the shortest, and the standard for military mensuration. Tieffenthaler reckons thirty-two cose to a degree; and Rennell, p. 5. values a cose at one mile and nine-tenths; i. e. one hundred cose is equal to one hundred and ninety miles. Tieffenthaler, who wrote in Latin, styled these *milliarja*. The cose is probably a very ancient measure, and, according to Strabo, marked as the miles were on the Roman roads. See d'Anville *Mes. Itiner.* and the term *ναυσάια*. I doubt, however, whether it is Hindoo. See a curious treatise on Indian measures. *Lettres Edif. tom. xv. 173, et seq.* If I could find any Sanskreet account of a measure equivalent to Arrian's stadium, I should conclude he had used the stadium, as Tieffenthaler adopts the mile.

count of the Ayeen Akbari, differing indeed from Arrian, as will appear when we come to mention the *Ākesínes*. From the same authority we learn, that the Doo-ab, or tract between the Indus and Hydaspes, is styled Sind-sagur by the Mogols; and its breadth is estimated at sixty cose, or an hundred and fourteen miles. The medium of this breadth is, as far as I can discover, taken at the point where the road crosses the Doo-ab, and as such, is to be estimated in the accounts that follow. The whole breadth of the Panje-ab, including all the Doo-abs from the Indus to the Satludj, is given at an hundred and eighty cose, or about three hundred and fifty " miles; the specific measures make the cose an hundred and eighty-five.

Cheref-eddin's account does not differ " much from the Ayeen Akbari; for he mentions, that the Chelum rises from the fountain Vir, or Syrin-nagar, and after passing the mountains, takes the name of Dindana " and Jamad. It then passes into the Genave, and above Moulтан both join the Ravee, which passes a second Moulтан. The united stream is afterwards joined by the Biah, and the whole body falls into the Indus at Outche. The mention of two Moulтans accords with our knowledge of the ancient Malli and modern Moulтан; and it is remarkable that Cheref-eddin " should agree with Arrian in making the Hyphasis or Biah join the Chen-ab before that river joins the Indus.

" Ayeen Akbari. Tieffenthaler.

" Only in respect to the Biah.

" That the Dindana and Chelum are the

same appears, vol. iii. p. 156. Cheref-eddin.

" See Cheref-eddin. vol. iii. p. 161.

The second river is the

Akesínes "	of	-	—	Arrian, Strabo, Pliny, Q. Curtius, &c.
Chen-ab,		-	—	Hindostani, Ayeen Akbari.
Jenaub,		-	}	Persian, Rennell, Ob. Chan. Herbert, p. 70. Tzen-ob. p. 73.
Chenaub,		-		
Gen-ave,		-	—	Cheref-eddin.
Tchen-av,		-	—	d'Anville.
Tchan-dar-Bargar,			—	Sanskreet, Tieffenthaler.
Chun-der-Bahka,			—	Sanskreet, Ayeen Akbari.
San-da-Bala,		-	—	Ptolemy.
Shan-trou,		-	—	Bernier, d'Anville.
Chinnan,		-	—	Forster, vol. i. p. 249.

The mere inspection of these names will shew the relation of them severally, as connected by the syllable Tchen, except the Akesínes; and I cannot help thinking but that it is an error of the ear, or owing to a desire of mollifying a barbarous sound, that the Greeks wrote Ake-sin-es for A-chen-ises, or " A-kesin-es for Ab-tchen-es. I find a tribe on this river, mentioned by Justin", styled Hia-cen-san-as, in which the prevailing syllable is preserved; and the initial letter, coming to us through the medium of the Persian Dj, causes all the variety exhibited in Djen, Djan, Tschan"; Tschen, Chan, Chen, Chin, Jen, Gen,

" Akesínes, as appears from Dionysius Perieg. 1138. τῶν δὲ ἀπὸ σπορίων Αἰσίνων Συρόματον δίκται πλεῖστος ῥέσσει Ὑδάσπης. And from him, Festus Avienus; ubi magnus sorbet Hydaspes delapsus summa saxosum mole Acesinem.

" Kesin for Ctchen or Djen, considering that the Greeks have no Ch in their language, is as near as they could approach to the sound.

" Lib. xii. c. 9.

" There is a term Dajenk, which occurs under a variety of forms as an adjunct to rivers in Mckran and Susiana. (See Cheref-eddin, vol. ii. *sub fine*. Otter, vol. i. p. 409.) From what language derived I know not; but from its frequent recurrence, it assuredly signifies a river or water. I do not suppose it connected with Chen or Djen; for Tchan and Tchander



Tchun<sup>38</sup>, Chun, Shan, San. It is to the credit of Ptolemy that he preserves this sound ; and whether we take his San-dab-ala from San-ab, or Chan-ab ; or the whole Sanda-bala from Chanda-bahka, the correspondence with the Sanskreet is equally visible. The Ayeen Akbari<sup>39</sup> asserts, that Chunder and Bahka are two streams which issue from the same mountain in the range called Cutwar or Kishtewar, which unite their waters and their names, and in the latter of these, I conclude, we are to look for the Tootapus<sup>40</sup> of Arrian, which, from the authority of Megásthene's, he brings into the Akesínes at an early part of his course.

The Akesínes is confessed, both by ancients and moderns, to be the principal of the Panje-ab streams, and his reception of the Hydaspes or Chelum from the west, with the Hydraôtes or Ravce from the east, is confirmed by all. Whether he receives the Biah and Satludj also, or whether they join the Indus without communicating with the Akesínes, is still a geographical problem. Arrian<sup>41</sup> every where asserts, that the Hy'phasis, Saranges, and Neudrus, that is, the Biah, Satludj, and Caul, join the Akesínes, either by themselves or by the intervention of the Hydraôtes. But the Ayeen Akbari brings them independently<sup>42</sup> into the Indus, considerably below Moultan ; and this is the authority of M. Rennell<sup>43</sup>. Tieffenthaler, if I under-

signify the moon. Tchun in Hindostance, Tchander in Sanskreet. *As. Res.* vol. ii. p. 24. Mr. W. Chambers. Tchun-ab is therefore the river of the moon, and Ravi the river of the sun. *As. Res.* vol. iii. p. 127. London ed.

<sup>38</sup> The Persians generally pronounce *z*, before *m* or *n*, like *u*. Frazer, Nadir Shah, p. 72.

<sup>39</sup> Tieffenthaler, Rennell.

<sup>40</sup> I assume this form, rather than follow the Latin orthography of the Greek diphthong, in hopes of obtaining more readily an Oriental etymology. Tootapus is Toot-ab.

<sup>41</sup> *PP.* 236. 240. 249. 252. *Lib.* vi. p. 238, et seq.

<sup>42</sup> Rather by implication than directly. See vol. ii. p. 136.

<sup>43</sup> Probably with the addition of his Persian MS. Map.

stand him right, is not consistent with himself; for in one place<sup>66</sup> he agrees with Rennell and the Ayeen Akbari, in another he makes the Biah and the Satludj join the Ravee. M. Rennell is justified in preferring the authority of the Ayeen Akbari to Arrian, as Arrian confesses himself that, beyond the Hy'phasis or Biah, he has no positive<sup>67</sup> evidence to rely on, and he does not follow his Macedonian guides, but Megásthene<sup>68</sup>. Mr. de la Rochette has adhered to d'Anville in this particular, and, in the disposition of Ayjodin with the parts adjacent, accords better with Cheref-eddin's march of 'Timour, than any other arrangement I have seen. It is extraordinary that d'Anville, who is more likely to err on the side of etymology than by a neglect of it, should not have observed that Shan-trou<sup>69</sup> rested upon the same root as Shan-ab, his own Tchen-av; but I have mentioned this error too often.

The prerogative of this river, in preserving its name till it joins the Indus, has been already noticed; and Arrian adds, that it is the only stream of the Panje-ab not fordable at any season of the year, which all the others are, after the cessation of the rains. The province, or doo-ab, between the Hydaspes or Chelum and this stream, is called Jenhut or Paradise<sup>70</sup>, and

<sup>66</sup> Vol. i. p. 118, compared with p. 115.

<sup>67</sup> P. 316.

<sup>68</sup> Megasthenes was sent into India by Seleucus, and reached the court of Sandracotta. See Asiatick Researches, vol. iv. President's Discourse, 1793, who says, that Sandrocotta is Chandra-gupta, a sovereign that reigned in Upper Hindostan at Pataliputra, Palimbothra; and that Pataliputra is at the junction of the Erranaboas and Ganges. Now Erranaboas is only Hiranyabáhu, another name for the Soane,

or an epithet signifying the many-armed. Sir W. Jones found this name in a Sanskreet book 2000 years old, p. 11.

<sup>69</sup> I have not met with the name Shantrou except in Bernier and d'Anville; but I have no doubt of its being a native corruption from Chander-ab, Chander-av, Shandrav, Shantrav, Shantrow.

<sup>70</sup> Ayeen Akbari, p. 132. These names are all Mogol distinctions, assigned by Akbar.

its breadth is estimated only at twenty cose, or about six-and-thirty miles; although we are here to look for the kingdom of Pôrus, and a population which could produce an army of forty thousand men. Extravagant as this may appear, it is confirmed by the Ayeen Akbari; for in an age when we have supposed the population to be diminished, Abu'l Fazil asserts that the quota of troops for Jenhut is three thousand seven hundred and thirty horse, forty-four thousand two hundred foot, with a revenue of 203,164*l.* sterling.

The third river is

The Hydraôtes of	—	Arrian,
Hyarôtes, -	—	Strabo, Q. Curtius.
Iyrawutti <sup>70</sup> , -	—	Sanskreet, Ayeen Akbari.
Ivaratti <sup>70</sup> , -	—	Sanskreet, Tieffenthaler.
Rhuadis, -	—	Ptolemy.
Adris, Adaris,	—	Commentators of Ptolemy.
Ravi <sup>71</sup> , Ravee,	—	Persian, or Hindostani.
Vitravadi, -	—	Paolino.

From this catalogue it is apparent that the termination Ravatti, Rawatti, or Rawutti, furnishes the Rhuadis of Ptolemy, and the Ravee of the moderns, as Iyrawutti is the Hyarôtes of Strabo, and the Hydraôtes of Arrian. It is better known at

<sup>70</sup> The transposition of the syllables in proper names, so often appealed to in this work, cannot be better exemplified than in these two words, both being professedly from the Sanskreet.

Vati, Watti, Wutti, signifies water or river.

Wilford As. Res. vol. iii. p. 59.

Ravi, Sun. Id. p. 127. Ravi-watti, River of the sun.

<sup>71</sup> Forster found this river with the same name above the mountains in Jumboo or Tschammoq. See vol. i. pp. 234. 245.

present as the river of Lahore, which renders the error of d'Anville more extraordinary, in placing Lahore<sup>72</sup> on the Akesines, a city of almost equal celebrity with Dehli itself. The roads from Cabul, Candahar, Attock, and Moultan, all unite at Lahore, as a centre between each respectively and the capital: and the celebrated avenue extending upwards of three hundred miles from this city to Dehli, which exists perhaps no longer except in the page of history, bespeaks not merely a communication, but the importance of the intercourse, and the numbers, as much as the luxury, of those who travelled by this route. The communication on the west from Nicæa to this city, explored by Alexander, is probably still open. For though<sup>73</sup> the road from Attock passes<sup>74</sup> at present through Rotas in a more northerly line, as I shall hereafter shew the relation between Jamad and Nicæa, a sovereignty at that island, whether tributary or independent, would naturally open a road from thence to a capital like Lahore; and a line from Attock drawn through Jamad being more direct than through Rotas, it is not impossible that it was the more early means of intercourse. That Alexander really reached Lahore, and that it existed in his time, there is some degree of proof; for the name written at an early period Lehaue<sup>75</sup>, was still more anciently Lack-onore and Lo-pore; and as Onore<sup>76</sup> and Pore are terminations expressive of a city or fortress, this will afford a reason why Alexander found

<sup>72</sup> See the Map prefixed to the *Antiquité Geographique des Indes*; but by his Map of *Asie*, première partie, it is evident he supposes the Akesines to be the modern Ravce.

<sup>73</sup> See six roads from Dehli or Hindostan to Cabul, in the *Ayecn Akbari*, vol. ii. p. 162. 8vo. ed.

Dankhose Ferry, Chowpcran Ferry on the Attock, lat. 31° 35'.

<sup>74</sup> Rennell.

<sup>75</sup> *Ayecn Akbari*. Tieffenthaler, vol. i. p. 102.

<sup>76</sup> Onoor, Can-onoor, Melia-poor, Nurser-poor, &c. &c.

one Pôr-us on the Hydaspes, and a second on the Hydraôtes, both deriving their name from their government, as Tâxiles from Tâxila, and both losing their native distinction by an omission of the Greeks. In Lo-pore therefore, the original name of Lahore, there is some ground for conjecture that we have the city of the second Porus<sup>77</sup>; and the antiquity of this place is confirmed by a remark of Tieffenthaler's, that one of its twelve gates is still called Taxili; he says it is on the west; and doubtless the road passing through it led to the Taxila of the Macedonians, as the Cabul and Dehli gates lead to those cities. Bernier came from Dehli to this city in the suite of an Emeer attendant upon Aurungzebe, and had he been as curious in collecting historical and geographical matter as his knowledge of the Persian language qualified him to be, much information might have been derived from him; but his page is filled with accounts of Mogol grandeur, and the only material circumstance he relates of Lahore is, its decline in consequence of the Ravee having changed its course, and now running at some miles distance; a fact confirmed by Tavernier, and perhaps not unusual with rivers<sup>78</sup> that overflow with periodical rains. Tieffenthaler mentions a canal which has since been cut from the river to the city, but whether it has in consequence recovered its splendour is very dubious. It was still a place of importance in Nadir Shah's time, but betrayed into his hands; and is now in possession of the Siks<sup>79</sup>, the deists and democrats of Hin-

<sup>77</sup> Porus-Puru, first or principal man, captain. Paolino, p. 34.

<sup>78</sup> The Indus itself, below Moulton, exhibits the same phenomenon almost every year. See *infra*

<sup>79</sup> The Siks disown Brahmin and Ma-

homet. They profess equality and the worship of one God. Their sect is numerous; but the doctrine of equality prevents their union, and renders their efforts weak and desultory. Mr. Hastings.

dostan in the present age. Cheref-eddin, whose geography is correct, wherever he attends Timour, is mistaken in confounding the Biah and the Ravee, an error which I could not be convinced he had committed, till I found that he placed Lahore<sup>20</sup> upon the Biah. The Ravee, according to Bernier, is as wide as the Loire, but this depends upon the season when it is seen; the vessels, however, built upon it at Lahore are large, and fit for the sea<sup>21</sup>, not indeed from their manner of building, but their bulk and capacity.

The province between the Chen-ab and the Ravee is called Retchna, and is thirty cose in breadth.

The fourth river is the

Hy'phasis of	-	-	— Arrian.
Hy'pasis,	-	-	— Pliny, lib. vi. 17.
Hy'panis,	-	-	— Strabo, lib. xv.
Beascha,	-	-	— Sanskreet, Tieffenthaler.
Beypasha,	-	-	— Sanskreet, Ayeen Akbari.
Bíbasis, or Bípasis,	-	-	— Ptolemy.
Beah <sup>22</sup> , Bea, Beand, Biah, Viah <sup>23</sup> ,	— Persian or Hindostani.		

The Bípasis of Ptolemy is, upon this occasion, once more the centre of relation between the Beypasha of the Sanskreet and the Hy'phasis of the Macedonians, who constantly fix the limits of their expedition at this stream. The error of Mr. d'Anville,

<sup>20</sup> Vol. iiii. p. 154. French edition.

Timour was not at Lahore himself; he passed into India on the south, and returned on the north of it; but he plundered it by his lieutenants, *ibid.*

<sup>21</sup> Ayeen Akbari, vol. i. p. 191.

<sup>22</sup> Forster found this river above the mountains, called Bias Gunge. Travels, vol. i. p. 226.

<sup>23</sup> Veya great, Veyarru, great river. Paceline, p. 30. Wihi. Herbert, p. 70.

who makes this stream the last of his series, has unfortunately betrayed Bernouilli, Tieffenthaler<sup>54</sup>, and de la Rochette, into the adoption of his system. This is the more extraordinary, as they all acknowledge the Setledj; and yet could not discover that the fourth stream, whatever it should prove to be, must be the boundary of the expedition.

This river<sup>55</sup> rises in the Pergunnah of Shoor, from that part of the northern range called Keloo, and joins the Setledj or Satludj, near Feerquzpoor. Below the junction, the stream is divided again near Ayjodin into four branches called Har, Haray, Doond, and Noorny. These four unite once more as they approach Moultan, and, according to Rennell, fall into the Indus about fifty miles below that city. Arrian, as has been already noticed, brings them into the Chen-ab or Akesínes, whose authority is followed by de la Rochette. What modern confirmation of this he has found I do not discover, except Cheref-eddin<sup>56</sup>, whose evidence indeed is direct; for the Ayeen Akhari, though it seems by implication to favour Rennell's opinion, fails of precision at the very moment it is most wanted. Between the Ravee and this river, Alexander subdued the Kathçi<sup>57</sup>, but in a position lower down than the course of the

<sup>54</sup> Tieffent. vol. i. p. 53; but contradicts himself, p. 55.

<sup>55</sup> Ayeen Akhari, vol. ii. p. 136.

<sup>56</sup> The evidence of Cheref-eddin would be perfect, if Timour had been on the spot, or if the author himself had not confounded the Ravee with the Biah. But from his mention of both in this place, as an evidence of report, it is still very strong. The river of Cashmeer, he says, takes various names, as the Dindana and Jamad, and joins the Gen-ave (Chen-ab) above Moultan. When they have passed

Moultan, they receive the Ravee, which passes by a second Moultan. Ensuite le fleuve Biah les joint, et tous auprès de la ville d'Outcha se jettent dans le grand fleuve Indus nommé Absend, i. e. Ab-send, fleuve Send, ou Scind.

Cheref-eddin plainly marks two Moutans here. Is it a fluctuation between the province and the city? or are we to suppose there were different heads of the district like the towns of the Malli in the time of Alexander?

<sup>57</sup> See *supra*, p. 94.

road from Lahore, as I collect from Strabo's confounding of the Kathêi" with Sopíthes, who was evidently near the junction of the rivers, wherever that may hereafter be placed.

Here the troops refused to proceed any farther; while Alexander, who had obtained intelligence of a powerful kingdom on the Ganges, sufficiently correspondent with the different seats of modern empire, was still unsatiated with conquest. The mutiny, however, was the disobedience of Macedonians, grief and sullen refusal, without turbulence; and the concessions of the king to their requests evince, that his discretion was as indubitable as his valour. Here, therefore, he built his altars at the limit of his progress, and hence he returned back to the Hydaspes, on which he was to embark with his troops, and to explore the Indus to its issue.

Mr. de la Rochette has placed these altars on the Setledj, and at the point where the road from Lahore to Dehli crosses that river; but they were on the Biah, not the Setledj, and lower down than that road, if the position of the Kathêi is right.

The province between the Ravee and the Biah is called Bari, and is only seventeen cose in breadth. The number of troops, which is above an hundred and sixty thousand", with the magnitude of the revenue, bespeak a population capable of producing the resistance Alexander" experienced in this country. Here was the termination of his conquests, and I am not called upon to proceed farther; but as there is only one river remain-

" *Kathai*. Kathai.

" *Ayeen Akbari*.

" Seventeen thousand were slain at Sangala, the capital, and upwards of seventy

thousand were taken in the city. Ar. 227. lib. v. The breadth of this Doo-ab is measured by the road, but the province itself is considerable.



ing to complete the series, it will not be unacceptable to the reader to see the connection of the whole.

The fifth river is the

Saranga, or Saranges, of	— Arrian.
Hesudrus, - - -	— Pliny.
Zadádrus, Zarádrus <sup>21</sup> , Zardrus,	— Ptolemy.
Schatooder <sup>22</sup> , Shetooder,	— Sanskreet. Ayeen Akbari.
Satludj, - - -	} Tieffenthaler.
Setlooge, - - -	
Satluz, - - -	
Setlej, Setledge, - - -	— Rennell.
Seteluj, - - -	— Persian. Hindostan.

In the Shetooder<sup>22</sup> of the Sanskreet we find the Hesoodrus of Pliny, and in the Satludj or Satluz, the Zardrus of Ptolemy. Anquetil du Perron informs us, that Zardluz is the proper orthography of this name in Persian, and that this word written

<sup>21</sup> Here is another transposition of the syllables.

<sup>22</sup> Shatudru, said to spring from a lake in Lassa, whence issue likewise the Brahmaputra running to the east, and the Surju which flows by Owde. See As. Res. vol. v. p. 45, Sewell's ed. Lond. and Paolino, p. 165.

<sup>23</sup> After noticing these five streams, it is satisfactory to find that Mr. Forster's route through Shamoo or Jummoo to Cashmeer does not contradict one assertion, nor the march of Nadir Shah in Abdul Kurreem. See p. 2, et seq. He advanced to Dehli by the Lahore road; he returned to the north of that track through Siadcote; but Abdul Kurreem takes no notice of any stream till he comes to the Chen-ab (very cold). He here

builds a bridge, which is carried away by the trees thrown in by the natives. He then makes his troops pass in boats, and takes that opportunity to search and rob them of their plunder. Marches to the Jylum, Chelum (Hydaspes). Notice of Afghans immediately on passing the Chelum. Rawit Pundy, not of Oude, but of Rohillas fixed here (in Siadsagur). Hassan Abdal, Yousef Zei, seem two territories of Chiefs. A river next—but what river? From Yousef Zei he sends off his elephants and baggage to Herat; marches himself towards Cabul, and crosses the Indus with its five branches at Pishore confluence, called Attock. Two are rivulets, three streams; one the Attock, anciently called Hit-Ab, Blue River. Arrives at Cabul, 20th Nov. 1739.

in Greek characters would be necessarily Zardrus. The source of this stream is far to the north-east, in the mountains of Ghaloor; descending from which, it runs to Feerouzpoor, where it receives the Biah, and with that falls either into the Chen-ab or into the Indus itself, as already noticed. Arrian mentions a river called Neudrus, which joins the Saranges<sup>94</sup>, but without any attributes to enable us to discover what it is. It may be the Caul, which, according to de la Rochette, is derived from the Setledj, and falls into it again; or, according to others, has a separate source, and joins the Setledj from the north-east. As Arrian professes his doubt of every thing beyond the Hy'phasis, and we are not concerned in reality with the Setledj at all, it is not necessary to pursue the inquiry. I shall only add, that Ptolemy joins the Zardrus with the Bípasis, that is, the Setledj with the Biah, and brings their united stream, not into the Indus, but the Chen-ab<sup>95</sup>.

The province between the Biah and Setledj is styled Beyt Jalindhār, in breadth fifty cose.

Such is the detail of the five rivers<sup>96</sup>; and when the Ayeeen Akbari calls them six, either in the province of Lahore or Moul-tan, it always includes the Indus, without any respect to the Setledj, as consisting of two streams. It will be of some im-

<sup>94</sup> Perhaps rather into the Ravee.

<sup>95</sup> This will not appear either in Ptolemy or Mercator's Map, because he makes the Hy-daspes prevail over the Akesínes, and therefore the stream he brings them into is called the Hydaspes, and not the Chen-ab, or Ake-sínes.

<sup>96</sup> Ferose III. Emperor of the Patan race mounted the throne in 1351, in Scindi. He was at Tatta, Sewan, Bicker, [Behker] and

Outche; returned to Dehli 1352. In 1353 he made a canal from the Suttuluj to the Jicker [Jidger], a stream which falls into the Jumaa below Agra. See Rennell's First Map of India.

From Ferose-poor, near the junction of the Suttuluj with the Biah, to Tibberhind. Dow, vol. i. p. 366. ed. 1792. Other canals were planned.

portance to geography, by this enumeration of names, to prevent future mistakes; not that I apprehend I have completed the catalogue, for it is probable that future travellers, in crossing this country in different latitudes, may collect many more local appellations, but an outline is drawn which may be filled up as future discovery shall afford the means. No consequence, indeed, will attach to this secondary object; but it is a matter of curiosity, at least, to connect the Macedonian appellations, disfigured as they are, with the native names of rivers, and to give a specimen of what may be pursued to advantage by those who are proficient in Oriental learning.

But after conducting these five streams individually into the Indus, some general observations are necessary to complete our purpose. The sources of all the streams which fall into the main channel of the Indus are to the south of that great ridge called Hindoo Khoo, which separates Tartary from Hindostan; the Indus itself, according to Major Rennell and the Ayeen Akbari, cuts that chain<sup>7</sup>, like the Ganges and Burhampooter: its ultimate source is still unknown. The chain of mountains coming from Candahar, the Paropámisus of the ancients, and the seat of the modern Agwhans or Afghans, takes a sweep to the north as far as Cabul, and furnishes those streams which fall into the Indus from the west. If this chain is cut by the Indus, it towers again on the eastern side of that river, and, dividing itself to encircle Cashmeer, emits the Chelum or Hydaspes from its northern ridge, while its southern chain sends forth the Akesínes, Hydraôtes, and Hy'phasis. The mountains which cover Cashmeer on the east appear to branch again into two

<sup>7</sup> Arrian asserts the contrary. Lib. v. p. 199.

ridges<sup>99</sup>, called by Cheref-eddin Tchamou, and by the moderns Jummo, between which the route of Timour lies in his return<sup>100</sup> from Dehli, and within which<sup>101</sup>, it is probable, the sources of the Setledj will be found.

The rains which fall in these mountains swell all the rivers which join the Indus from the west, or from the east, about the summer<sup>102</sup> solstice<sup>103</sup>; and from this circumstance both Alexander and Timour, who planned a summer campaign, experienced all the inconveniencies of winter. The limits of these rains may be fixed at Moultan; and from Moultan, the Indus, like the Nile, flows towards the sea through a country rarely refreshed by the genial shower or nutritious dew, and condemned to everlasting sterility<sup>104</sup>, except a narrow margin which is moistened by the stream.

In conducting the navigation of the fleet through this desert tract, it is difficult to find a situation for the tribes which Alexander found to conquer. Some information may be collected from the Ayeen Akbari, d'Anville, and Rennell; but

<sup>99</sup> See this confirmed by Forster, vol. ii. p. 44.

<sup>100</sup> This is the reason that on his return we find him at the Genave, (Chen-ab,) without notice of the more eastern Panje-ab rivers.

<sup>101</sup> See this conjecture verified in Forster's Travels, vol. i. pp. 206, 207, 208. 211.

<sup>102</sup> Diodorus, lib. i. p. 51, takes notice of this.

<sup>103</sup> The rains cease in October, and a cold north wind blows five or six months. Bernier. No rain in Scindi. See Strabo, lib. xv. p. 691, who says, the rains in the higher country begin early in spring, and last till the setting of Arcturus (autumn).

<sup>104</sup> The country on both sides the Indus is hardly capable of cultivation at any distance from the stream. On the stream itself we find pastures and herdsmen; but beyond these pastures, on the eastern side, is a desert terminated by the Sand mountains, the residence of the Ashambetees or Jams. On the western side, another desert extending to the range of rocks inhabited by the Belootches.

The Belootches are Acorn-eaters, from Beloot, an acorn. Bread made of acorns pulverised is the common food of the inhabitants of the mountains of Farsistan and Khousistan. Mr. H. Jones.

unless we can suppose a better government and greater industry to have produced a superior population, to that which modern accounts will justify, the conquest <sup>104</sup> must have been of small importance to the conqueror.

If I could hope for health and leisure to attend this conqueror through his several campaigns, I am persuaded that the geographical accuracy of Arrian, whenever he follows Ptolemy and Aristobólus, is as demonstrable to the westward of the Indus, as towards the east; but with that at present we are not concerned. My intention has been to prove, that the series of rivers in the Panje-ab is the same in Arrian, Ptolemy, and the Ayeen Akbari, and that the names preserved in Ptolemy are all correspondent to the Sanskreet <sup>105</sup>. This is what the demonstration required, at a period when the Sanskreet was the native language, unmixed by foreign communication, and uncorrupted by Greek, Tartar, or Persian invaders. I conclude, therefore, that the following enumeration is verified :

<i>Arrian.</i>	<i>Ptolemy.</i>	<i>Sanskreet.</i>
Hydaspes,	Bidaspes,	Bidasta, or Bedusta,
A-kesín-es,	Sandabala,	Chandar-Bahka,
Hydraôtes,	Rhuadis,	Iyrawutti,
Hy'phasis,	Bípasis,	Beypasha,
Saranges,	Zadadrus,	Shatooder, or Satludj.

<sup>104</sup> Behker and Sewee only occur in this tract. Their relative value is considered hereafter.

<sup>105</sup> Sindha in Sanskreet signifies sea. The

Indus is properly so called in Oriental hyperbole, not only from its size but inundation. Paulino, p. 167.

## III. NIKAIA, OR NIKÆA.

AFTER establishing the several rivers with their mutual connection and relation, let us return to the Hydaspes or Chelum, to search for the position of Nikêa. The discovery is not difficult; for though the present road from Attock to Lahore crosses the Chelum at Rotas, and it would have been agreeable to the plan already laid down to have conducted Alexander by this route, we are directed by Arrian with so much precision to another point, that we can hardly be mistaken. On a bend of the Hydaspes, he says, there is an island, surrounded by the river, with a second branch, or artificial canal, on the eastern side. Below the southern point of this island, and the reunion of the river, Pôrus had drawn up his forces on the eastern side; Alexander, leaving Cráterus with a considerable body of forces opposed to Pôrus, marched in the night to effect a passage, under cover of this island, to the opposite shore. He embarked himself in a galley, and conveyed his troops in boats brought over land from the Indus. He had scarcely disembarked them, when he found himself encircled by another channel, which, being swelled by the solstitial rains, he forded with great difficulty; then, turning to his right, he followed the course of the stream, and, after defeating the son of Pôrus, advanced to the spot where the king himself had drawn up his forces opposite to Cráterus. Here the battle was fought, and here must be the site of Nikêa<sup>106</sup>.

<sup>106</sup> Major Rennell, in his Memoir, p. 93, concludes that Alexander passed the Chelum at Rotas; but in the accompanying map places Nicêa lower down - - - 28 miles.

Jamad, by de la Rochette, 60 miles.  
by Rennell's first Map, 65 miles.  
by Rennell's second Map, 28 miles.  
Arrian says, Alexander marched one hun-

The distance from his camp on the western side of the river to the head of the island is given by Arrian, and may be estimated at nine miles. If, therefore, we can find an island in modern geography which will correspond with this of Arrian, we have a precise point given, and have only to fix Nikêa at the requisite distance below. Such an island is found, and situated on a bend of the Chelum or Hydaspes, about twenty-eight miles below Rotas, and in a more direct line between Attock and Lahore than Rotas itself. The road probably passed at this place in earlier times, and has been diverted to Rotas only because the island afforded a strong post, which in India is always a source of exaction. This island is called Jamad by de la Rochette, and by Major Rennell in his second Map; in his first Map it contains a fort named Shah Buldien's <sup>107</sup> Fort, equivalent, I conclude, to Cheref-eddin's <sup>108</sup> Chehabeddin. It is remarkable that Chehabeddin <sup>109</sup> should oppose the progress of Timour, at the distance of sixteen centuries, almost in the very spot where Pôrus had encountered Alexander. From the resistance of Chehabeddin, it may be presumed that the island has the advantage of high ground and woods, as described by

dred and fifty stadia from his camp to the island; by a rude calculation I make it nine miles. As the stadium of Arrian has already been made to appear very indefinite, I can only say it is not here the stadium of eight to a mile; for if it were, Alexander must have marched twice 18 miles, transported an army across a river, and fought two battles, in the space of about eighteen or twenty hours. I pretend not, however, to any degree of accuracy, as the account of this battle is taken not from the journal but the history.

<sup>107</sup> Shah-Bul-Deen (I guess), that is to say, King, Spade of Religion. Shah Abou Deen,

literally, King Father of Religion. Mr. H. Jones.

<sup>108</sup> Vol. iii. p. 48. French edition.

<sup>109</sup> Chehabeddin Mobarec étoit prince d'une île de la rivière de Jamad. Il avoit un grand nombre de domestiques et d'officiers, et il étoit puissant en bien et en meubles. Cheref-eddin, tom. iii. p. 48.

To this the translator, Petis de la Croix, subjoins à note.

Jamad. Rivière pres de l'Indus. C'est la suite de la rivière de Dendana, qui vient de Cachmir.

Arrian ; and that it was a place of importance<sup>100</sup> in Timour's time cannot be doubted ; for the river, in this part of its course at least, took the name of Jamad, and if there was a road to it from Attock, there consequently was another from this fort to Lahore.

Nikêa being the point at which the voyage commences, I shall settle the longitude and latitude of this place by Mr. Gossellin's method of correcting Ptolemy ; and as it is one object of this work to reconcile ancient geography with modern, the system of Mr. Gossellin is worthy of consideration.

His system I am not bound to adopt in all its parts, neither do I believe that the geography of Eratosthenes<sup>101</sup> was founded, as he asserts, upon the writings of Pytheas of Marseilles. I have much hesitation also in acceding to M. Gossellin's opinion, that a stadium is the seven hundredth<sup>102</sup> part of a degree of a great circle, for I reckon it a six hundredth part, and that on the authority of Mr. d'Anville.

The Olympic stadium is estimated at six hundred<sup>103</sup> Greek feet, and the Greek foot is very nearly equal to the English. Eight<sup>104</sup> of these stadia are reckoned equivalent to a Roman mile, and there are nearly nine in a mile English. But as my

<sup>100</sup> And p. 49. Se confiant à la force de son isle, qu'il croyoit inaccessible.

<sup>101</sup> Gossellin Geog. des Grecs, p. 46.

<sup>102</sup> This, however, is said to be the estimation of Eratosthenes.

<sup>103</sup> Others make it six hundred and twenty-five. D'Anville Mesures Itin. p. 70. See Blair's Geog. p. 67.

<sup>104</sup> Eight one-third according to Polybius, Strabo, p. 322.

D'Anville never values this one-third of Polybius in his calculation.

600 feet =  $94\frac{1}{2}$  French toises.

$94\frac{1}{2}$	}	$94\frac{1}{2}$
8		9
<hr/>		<hr/>
752		846
4	}	$4\frac{1}{2}$
<hr/>		<hr/>
756 toises. D'Anville's Rom. mile.		850 $\frac{1}{2}$ toises :

but the mile English, according to d'Anville, is eight hundred and twenty-six toises, so that nine Olympic stadia are equal to a mile English, and twenty-four one-half toises over.



authorities are French, the calculation will be more easily stated in toises than English measures. The French toise, however, being six feet, and the foot French to the foot English nearly as sixteen to fifteen, the reduction may be easily made by any one who wishes to compare it with the English mile. Let us observe next, that d'Anville reckons seventy-five miles Roman as equal to a degree of a great circle, and then let us inquire whether five hundred, six hundred, or seven hundred stadia correspond best with this estimate of a degree.

The Roman mile of 75 to a degree produces 56,700 toises.

The stadium of 500	—	47,250
stadium of 600	—	56,700
stadium of 700	—	66,150

Hence it appears, that the computation by six hundred stadia to a degree contains exactly the same number of toises as the estimate by the Roman mile, which in fact it ought to do. Why, therefore, Mr. Gossellin assumes the stadium of seven hundred to a degree, in order to correct the longitudes of Ptolemy, is a question for discussion.

His system<sup>115</sup> is this, that the chart of Eratosthenes was upon

<sup>115</sup> In the French translation of this work there is a note inserted, pronouncing that the astronomical differs from the Olympic or civil stadium; and that the former is an aliquot part of the measure of the earth. It is added, that the stadium of 700 to a degree, adopted by Eratosthenes, makes the degree consist of 57,060 toises, not of 66,150, as is here asserted. I have never yet met with this astronomical stadium; but I doubt the propriety of measuring the standard by the world, in-

stead of the world by the standard; that is, I doubt whether the ancients adopted this practice. But if a degree measured by the astronomical stadium consist of 57,060 toises, it approaches so nearly to 56,700, that is, the measure of a degree by 609 Olympic stadia, as to come within 360 toises, which is little more than half a toise, or three feet on a stadium; a difference hardly requiring a resort to two different stadia for rectification. I have been convinced by the Bishop of St. Asaph,

a plain <sup>116</sup>, in which his principal parallel passed through Rhodes ; but the chart of Ptolemy was upon a sphere, and as he reckoned five hundred stadia equal to a degree of a great circle, he allowed four hundred to a degree on the parallel of Rhodes. But Mr. Gossellin says, that Ptolemy ought to have allowed five hundred stadia to a degree on the parallel of Rhodes (for that was the estimation of Eratosthenes himself), and to have taken seven hundred stadia to a degree at the equator.

The method Mr. Gossellin takes in consequence of this, to correct the longitudes of Ptolemy, is, to multiply the longitude by five hundred, and divide the produce by seven hundred, in order to reduce stadia of five hundred in a degree to those of seven hundred. The success of this experiment is extraordinary ; and having explained the principle it is founded on, I must leave the defence of it to Mr. Gossellin himself. This is, however, the mode of calculation in regulating the longitude of the principal places, adopted in the following pages.

It is well known that the latitudes of Ptolemy are more correct than his longitudes ; and this arose, according to Mr. Gossellin, from his taking seven hundred stadia to a degree of latitude, while he assumed only five hundred <sup>117</sup> to a degree of longitude. It is not requisite for me to enter into this question, or to inform the reader that a degree of every great circle is equal ; but another difficulty I had to encounter, which was to

that I was misled in adopting Mr. Gossellin's calculation ; but as it had been applied throughout the former edition, I could not easily retract it without a general alteration of the work : I have therefore let it stand, but think it right to guard it with this caution.

<sup>116</sup> Mr. Dalrymple approves of plain, or

Mercator's charts, and the rule given for calculating the true longitude according to the diminution of the degree of longitude in proportion to the distance from the equator.

<sup>117</sup> This is incorrect. Ptolemy invariably reckons a degree of a great circle, whether of the equator or of a meridian, equal to 500 stadia. Bishpp Horsley.

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obtain an accurate statement of the difference of longitude between the Fortunate Islands, or Ferro, (which is the first meridian of Ptolemy,) and the meridian of Greenwich or Paris, on which most of the charts I was concerned with were founded. I referred this question to Mr. de la Rochette<sup>118</sup>, whose knowledge of the science qualifies him to solve problems of much greater intricacy, and his solution I have printed in the Appendix<sup>119</sup>. The result of it is this, that Ptolemy makes the difference of longitude between Ferro and London twenty degrees, while the real difference, according to Maskeline's Tables, is  $17^{\circ} 40' 13''$ . This is consequently the allowance to be made; and instead of  $3^{\circ} 30'$ , which Ptolemy gives between London and Paris, the real difference is  $2^{\circ} 25' 37''$ .

With these preparations before me, I make the first experiment upon Nikêa on the Hydaspes, that is, the isle of Jamad in the Chelum, from whence I take the first departure of the fleet.

Ptolemy has not Nikêa in his series, but Booképhala only<sup>120</sup>; as Booképhala, however, is supposed to have been on the opposite side of the river, the difference is inconsiderable.

Longitude of Jamad, by Major Rennell,  $71^{\circ} 50'$  east of Greenwich.

Longitude of Ferro, - - -  $17^{\circ} 40'$  west.

True difference of longitude between }  $89^{\circ} 30' 0''$   
Jamad and Ferro, - - - }

Longitude by Ptolemy, - - -  $125^{\circ} 30' 0''$

<sup>118</sup> Mr. de la Rochette is the author of a variety of maps published by Faden; particularly two, one of India and one of the Propontis, which placé him high in the rank of modern geographers. He has composed also a map for the conquests of Alexander, which I would have obtained for this work if I had dared to venture on the purchase.

<sup>119</sup> See Appendix, No. II.

<sup>120</sup> See Cellarius, tom. ii. 529.

Mr. Gossellin's method of correction follows :

Longitude by Ptolemy,  $125\frac{1}{2}$ '''  
500 stadia.

	62500	
	250	
	-----	
Stadia, 700	62750	89
	5600	
	-----	
	6750	
	6300	
	-----	
	450	
	60 minutes.	
	-----	
700	27000	38
	2100	
	-----	
	6000	
	5600	
	-----	
	400 reducible to seconds.	

''' Method in the French translation.

	125° 30'	
	500	
	-----	
	62500	
	250	
	-----	
	62750	700
	6750	
	450	89° 38'
	60	
	-----	
	27000	
	6000	
	400	
	Q 2	

This process I have thought would not be unacceptable, as I have frequently stood in need of similar assistance myself; and upon my submitting it to Mr. Wales, seeing that  $89^{\circ} 38'$  was only eight minutes more than the true difference of longitude, his observation was, "That Mr. Gossellin's method of correction succeeded wonderfully in this instance."<sup>133</sup>

### III. NIKAIÁ, NIKEA.

Longitude by Ptolemy, from Ferro,	-	-	-	$125^{\circ} 30' 0''$
Longitude of Ptolemy, reduced to Greenwich,	}			$89^{\circ} 38' 0''$
and corrected by Mr. Gossellin's method,				
Longitude by Rennell,	-	-	-	$89^{\circ} 30' 0''$
<hr/>				
Latitude by Ptolemy,	-	-	-	$30^{\circ} 20' 0''$
Latitude by Rennell,	-	-	-	$31^{\circ} 40' 0''$
Latitude by de la Rochette,	-	-	-	$31^{\circ} 30' 0''$

At Nikêa<sup>133</sup>, therefore, we fix the departure of the fleet on the twenty-third of October, in the year three hundred and twenty-seven before Christ. The views of Alexander in preparing the fleet and undertaking the navigation have been sufficiently noticed already; but the anxiety which oppressed his mind cannot be exhibited better than in the description of Arrian<sup>134</sup>, or the language of Nearchus himself.

<sup>133</sup> For a mistake relative to Ptolemy which occurred in this place, I have been justly censured by the French translator, and many of my friends at home. I have now expunged it, and an acknowledgment of my error is the best apology I can make.

<sup>133</sup> Diodorus makes the departure from the Akésines. Lib. xvii. 234.

<sup>134</sup> Arrian introduces this account after the fleet had reached Pattala; but as Nearchus commanded during the passage down the Indus, it is much more probable that the con-

He dreaded, says the historian, the length of the voyage, the danger of a desert coast, the want of harbours, and the difficulty of supplies; he was fearful lest a failure should tarnish the splendour of his former actions; still, however, the desire of attempting something new and extraordinary prevailed. But who was to command such an expedition? Who was capable of inspiring the men with confidence; or persuading them, that in undertaking such a service they were not abandoned to destruction? Such, says Nearchus, was the perturbation of Alexander when he ordered me to attend him, and consulted me on the choice of a commander. "One," said he, "excuses himself because he thinks the danger insuperable; others are unfit for the service from timidity; others think of nothing but how to get home; and many I cannot approve for a variety of other reasons." "Upon hearing this," says Nearchus, "I offered myself for the command, and promised the king that, under the protection of God<sup>125</sup>, I would conduct the fleet safe into the gulph of Persia, if the sea were navigable, and the undertaking within the power of man to perform." Alexander hesitated; he loved Nearchus, and ad-

sultation took place before his first appointment than after he was actually in command.

Schmieder thinks that this consultation with Nearchus took place not at Nikêa, but immediately previous to the sailing of the fleet from the mouth of the Indus; but to this it may be objected, that Nearchus was evidently declared admiral when all the great officers of the army were named trierarchs or captains of gallees. They none of them sailed from the Indus, but only continued with the fleet down

the river. Schneider, in order to support his opinion, considers the trierarchs not as commanders, but as fitters out of the gallees, in the Athenian sense of the term. But at Athens this was an office of burden; and Alexander, possessed as he was of immense treasures, would hardly require this sacrifice from his officers: he might indeed have employed them severally as inspectors or commissioners, one to each ship respectively.

<sup>125</sup> Τῷ Θεῷ. Arrian was the disciple of Epictetus.

mired him the more for the promptitude of his offer; but how could he expose such a friend to the distresses and hazard of such a voyage! Nearchus still persisted in his proposal, and intreated the acceptance of his services. At length the king, who had probably consulted him with the hope that his spirit would prompt him to make the offer, consented, and named him admiral of the fleet. The appointment answered his expectation; for the men destined to the embarkation no longer considered the expedition as desperate, when they found a man so much in the king's favour and confidence was to be the commander, and one whom they knew he would not have exposed to inevitable danger. Alacrity succeeded to terror, the ships were equipped, not only with what was necessary, but with great splendour; the officers vying with each other who should collect the best men for the service, and have his complement<sup>126</sup> most effective. Success was anticipated, and despair subdued.

The next concern was the appointment of the officers, and a list of names is given which it is evident does not specify those who performed the voyage, but such as had a temporary command only during the passage down the river. The amount is thirty-three, which specifies the number<sup>127</sup> of gallies; but of these we cannot certify that any circumnavigated the coast, except Archias.

<sup>126</sup> Ἐκκληρώματα.

<sup>127</sup> It is true that Arrian, p. 236, says, the Triaconteri were eighty; but under that title, as a general one, he probably includes the Hemiolie, or half-decked vessels. The He-

miolie are half-decked vessels, according to Gronovius; but Casaubon ad Athen. lib. v. p. 203, says, they were rowed with two banks of oars from the head to the mast, and from the mast aft, with one. Not. p. 737.

## MACEDONIANS.

1. Hephêstion, son of Amyntor.
2. Leonnátus, — Eunos.
3. Lysímachus, — Agathocles.
4. Asclepiodôrus, — Timander.
5. Archon, — Clinias.
6. Demonícus, — Athenêus.
7. Archias, — Anaxídotus.
8. Ophellas, — Silêus.
9. Timanthes, — Pantíades.

These were all citizens of Pella.

10. Nearchus <sup>128</sup>, son of Androtímus.
11. Lampêdon, — Lárichus.
12. Andrósthenes, — Callístratus.

Citizens of Amphípolis.

13. Cráterus, son of Alexander.
14. Perdiccas, — Orontes.

Natives of Orestes.

15. Ptolemy, son of Lagus.
16. Aristónous, — Pisêus.

Natives of Eordêa.

17. Metron, son of Epicharmus.
18. Nicárchides, — Simus.

Natives of Pydna.

19. Attalus, son of Andrómenes.

Native of Stymphæa.

20. Peucestas, son of Alexander.

Native of Miéza.

<sup>128</sup> Nearchus was a native of Crete, but a citizen of Amphipolis.



## MACEDONIANS.

21. Pithon, son of Cráteas.  
Native of Alcomenæ.
  22. Leonnátus, son of Antípater.  
Native of Ægæ.
  23. Pantauchus, son of Nicoláus.  
Native of Aloris.
  24. Mylleas, son of Zóilus.  
Native of Berêa.
- Thus far the list consists of Macedonians.
- 
25. Médius, son of Oxy'nthemis.  
Native of Larissa, in Thessaly.
  26. Eúmenes, son of Hierónymus.  
Native of Cardia.
  27. Critobólus, son of Plato.  
Native of Cos.
  28. Thoas, son of Menodórus.
  29. Mêandrus, — Mandrógenes.  
Natives of Magnêsia.
  30. Andron, son of Cábelas.  
Native of Teios.
  31. Nícocles, son of Pasícrates.  
Native of Soli, in Cyprus.
  32. Nithádon<sup>129</sup>, son of Pny'tagoras.  
Native of Salamis, in Cyprus.

<sup>129</sup> Nitháphon Gronov.

33. Magôas<sup>120</sup>, son of Pharnooches.

A Persian.

Onesícritus of Astypalêa, Pilot, and Master of Alexander's own ship.

Evágoras, son of Eúcleon a Corinthian, Secretary, or Commissary to the Fleet.

Instead of this barren list of officers, many of whom certainly did not accompany Nearchus round the coast, and many whose names are never mentioned except upon this occasion, it would have been some satisfaction, if it were possible, to have preserved the list of those who were the real first explorers of the Indian ocean; but out of the whole number here enumerated, the only names which occur afterwards in the narrative are those of Archias and Onesícritus.

Nearchus<sup>121</sup>, as we have already seen, was a native of Crete, but was enrolled a citizen of Amphípolis, most probably at the time when Philip, having taken that city from the Athenians, was collecting inhabitants in order to establish it as a fortress, and the mart of his new conquests in Thrace. Nearchus did not continue at Amphípolis, but came up to the court of Philip, and had so ingratiated himself with Alexander, that, in the family dissensions which arose upon the secession of Oly'mpias, and some secret transactions of her son in regard to a marriage with the daughter of Pexodôrus, satrap of Cária,

<sup>120</sup> Bagôas. Gronovius. But why? That eunuch hardly attended the army.

Strabo mentions an Andrôstheneis of Thasus, p. 766, who sailed with Nearchus, but he does not say in what capacity; I conclude,

however, that it is the same Andrôstheneis who went down the gulph of Persia to explore the Arabian coast. Ar. lib. vii. p. 301.

<sup>121</sup> See Sainte Croix, Exam. p. 250.

Philip banished Nearchus, with some others whom he supposed too much attached to the interests of Alexander<sup>122</sup>. Upon the death of Philip, he was recalled; and his sufferings in the cause naturally secured the affections of his sovereign, and sufficiently account for the confidence of the fleet inspired by his appointment.

This is the officer whom we are now to accompany; but if the whole of his journal is preserved by Arrian, there is some reason to complain of the commander for recording all that contributed to his own glory, and to lament that he did not rescue the fame of his brave followers from oblivion. Hephæstion, Leonnátus, Lysímachus, Ptólemy, Cráterus, A'ttalus, Peucestas, and probably many others, had evidently only a temporary or honorary command; and the silence of Nearchus in respect to the others throws a degree of uncertainty over the remainder of the catalogue. Neither does it any where clearly appear what number of ships or men accompanied Nearchus to the conclusion of the voyage. If we suppose the ships of war only fit for the service, thirty gallies might possibly contain from two to three thousand<sup>123</sup> men; but this estimation of both is uncertain, and in reality too high, considering the little means of support they found on the voyage, and the impossibility of discriminating the fighting men from the mariners.

The mariners were supplied from a number of Phénicians, Egyptians, Cyprians, Iónians, natives of the Hellespont and Egéan islands, who had accompanied the army either in a

<sup>122</sup> See Plutarch in vita Alexandri, p. 669. Edit. Francfort, 1599.

<sup>123</sup> It is possible that I may estimate the number too high, both here and on the voyage. See Kokala. For the whole fleet, including

transports, carried no more troops than eight thousand. The mariners I find no proper data to calculate. At other times, indeed, eighteen hundred horse and ten thousand foot are embarked.

military or mercantile character; neither is it unreasonable to suppose that at the oar many of the natives were employed, induced by advantage, or compelled by force; for this, as a service which required little more than bodily strength, the Greeks frequently assigned to slaves, or those removed but one degree from slavery.

The fleet had been built or collected on the Indus, and part of it had been brought over land to the Hydaspes. The number of vessels is estimated at two thousand <sup>134</sup> by the historians, including all sorts, from the galley to the tender. The collecting of such a fleet has been accounted for already, and the possibility of conveying great part of it from one river to the other, will not appear extraordinary to those who are acquainted with a similar practice at the isthmus of Corinth, or consider that Alexander was at the head of an hundred and twenty thousand <sup>135</sup> men, and was possessed of treasures, alliances, dependents, and tributaries, sufficient to command the services of all the native inhabitants of the country, if requisite.

The voyage down the river is described rather as a triumphal procession than a military progress. The size of the vessels, the conveyance of horses <sup>136</sup> on board, the numbers and splendour of the equipment attracted the natives to be spectators of the pomp. The sound of instruments, the clang of arms, the commands of the officers, the measured song of the modulators <sup>137</sup>,

<sup>134</sup> Eight hundred ships of war and transports.

<sup>135</sup> We must suppose some extraordinary means requisite, as the space between the Indus and Hydaspes is estimated at sixty-eight cose, or about one hundred and thirty miles. This distance, indeed, might be diminished by descending the Indus, but we have no data

to direct us how far. The vessels were probably taken to pieces.

<sup>136</sup> It is not improbable that Alexander had supplied his cavalry with horses from the Penje-ab. They are as good as Irakies, *i. e.* Persian. Ayceen Akbari.

<sup>137</sup> *Καὶ ποταὶ.*

the responses<sup>138</sup> of the mariners, the dashing of the oars, and these sounds frequently reverberated from overhanging shores, are all scenery presented to our imagination by the historians, and evidently bespeak the language of those who shared with pride in this scene of triumph and magnificence.

Arrian has given us the breadth of the Hydaspes and several other streams which join the Indus, but informs us, he has the authority of Ptolemy for that of the Akesínes alone; that river he estimates at fifteen<sup>139</sup> stadia, the Hydaspes<sup>140</sup> at twenty. The Indus, he says, was forty at a medium, and fifteen where narrowest; that in its course from the confluence of the Akesínes to the Delta of Páttala it was an hundred, and lower towards the sea two hundred. By any value of the stadium this estimate is doubtless too high, and the variety of accounts recorded by Strabo<sup>141</sup> gives room for much uncertainty upon the subject; the highest, he says, was an hundred stadia, the medium fifty, and the lowest seven. It is evident, therefore, that those who differed as much as seven from an hundred, either did not use the same stadium, or did not measure the river at the same time of the year: but it is remarkable, that if the lowest number is considered as the Olympic<sup>142</sup> stadium<sup>143</sup>, it corresponds nearly with Mr. Forster's account of the Indus above Attock, where he crossed it, and estimated it at three quarters of a mile English<sup>144</sup>. Mr. Forster passed in July when the rains must have commenced in the mountains, though they had not reached the lower country; if, therefore, we allow the river to have received

<sup>138</sup> So Gronovius renders βόη.

<sup>139</sup> P. 222.

<sup>140</sup> P. 239.

<sup>141</sup> Lib. xv. p. 700.

<sup>142</sup> Nine Olympic stadia wanted just 14 yards of one mile English. Bp. H.

<sup>143</sup> Eight to a mile Roman.

<sup>144</sup> Rennell, p. 109.

some accession to its volume, we have a very extraordinary correspondence between an ancient and a modern account. It would be well if we could reduce the larger numbers of Arrian with as much facility; but even Mr. d'Anville's stadium of fifty-one toises, which gives somewhat more than sixteen to a mile English, must here fail us; for fifteen stadia would make the Akesínes near a mile broad; twenty would give a mile and quarter to the Hydaspes; forty would supply two miles and a half to the Indus above the confluence; an hundred produces six miles and a quarter for the breadth between the confluence and Pattala; and two hundred, twelve miles and an half for its final course. Shall we impute this enormity to the amplification of the Macedonians, or to the overflowing of the river? In support of the latter, we have another extravagance of Onesícritus recorded by Strabo, who says, the Indus rises forty <sup>145</sup> feet, twenty to its banks and twenty above them; but, unfortunately for this assertion, the fleet left Nicéa in October, when the swelling must have been on the decrease, and reached Páttala in July, before the next year's swelling could be very evident in the lower part of the river. According to Tieffenthaler and the Ayeen Akbari, the Indus between Moulton and Tatta runs in a stream comparatively narrow, but very deep, and Hamilton <sup>146</sup> asserts, that the channel at Tatta is not more than a mile broad. Arrian's account must consequently be abandoned, unless we make a large allowance <sup>147</sup> for the flood, and his language seems to justify this at the time when he mentions the hundred stadia;

<sup>145</sup> The Ganges only rises 32 feet. Ren. Ap. 351.

<sup>146</sup> It is very possible that the channel from Laribundar to Tatta is less at present than formerly, for the mouths of the Indus all tend

to the accumulation of obstructions. Hamilton's account is probably just.

<sup>147</sup> Twenty feet to the bank, twenty to spread over the country. See Eustathius ad 1139. Dionysii Perieg.

for he adds, "this is the breadth when it spreads"<sup>148</sup> its waters most." Much reason as there is to commend Arrian's accuracy in general, it must be allowed that he copied in this instance from those who delighted in exaggeration, or chose to raise ideas of magnificence by describing not what the voyagers saw, but what at another time of the year they might have seen.

The most moderate breadth of the Hydaspes is found where we should least expect it, in Q. Curtius, who says that it is four stadia, or half a mile, and if we allow, with Mr. Forster, three quarters of a mile to the Indus above Attock, at a season when it was not yet much swelled, there is a reasonable proportion in giving half a mile to the Hydaspes<sup>149</sup> at a season when the swelling may be supposed not entirely past.

On this river, at Nicêa, Alexander embarked, carrying on board the hypaspists, Agrians, archers, and the royal troop<sup>150</sup> of horse. Cráterus<sup>151</sup> marched with another body on the right, or western side of the river, while Hephêstion commanded a third on the eastern bank. A fourth under the direction of Philip, satrap of the country on the west of the Indus, followed at three

<sup>148</sup> καὶ ὑπὲρ τῆς ἑκατὸν τυχὸν ἵνα περιλημνύει μᾶλλον.

*Perhaps above one hundred stadia where it spreads the widest.*

It is reasonable to conclude, that all the varying accounts of the breadth of the river, which, as Strabo observes, fluctuate between seven and an hundred stadia, owe their disagreement to the different views of the stream, either in its lowest or its highest state. See Arrian, lib. v. p. 200. Ctésias (if Ctésias is any authority) says, that the Indus where narrowest, is forty stadia in breadth, and where widest an hundred, but that in general, a me-

dium between these may be assigned.

<sup>149</sup> It is remarkable that Curtius mentions also this river—profundo alveo—stagnantibus aquis—occultis saxis—sine vado—in medio amne insulæ crebræ—una insula amplior cæteris. All accordant circumstances, and the last agreeing with Arrian, though omitted by Diodorus. Q. Curtius, vol. ii. 653.

<sup>150</sup> Ἀγῆμα ἱππίων, used not exactly by Arrian. It sometimes means all the companions, ἑταῖροι, sometimes ἡ βασιλική, the royal troop.

<sup>151</sup> See the note of Gronovius in loco, upon the division of forces, p. 333.

days distance in the rear. The troops commanded by Hephéstion were by far more numerous than the rest; and he had likewise the charge of two hundred elephants, with orders to join Cráterus and reduce the territory of Sopíthes<sup>153</sup>, which seems to occupy the angle between the junction of the Hy'phasis and the Akesínes. Having distributed the land forces in this manner, Alexander fell down the river for three days to a station, where he halted two more for the troops to join, and then proceeding again for five<sup>154</sup> days, he reached the confluence of the Hydaspes and Akesínes<sup>154</sup>. The fleet is described as disposed into different divisions, with orders to observe a due distance, that no confusion might arise; and the progress by water was regulated to accommodate the motions of the army. With this object in view, we can hardly cast an eye over the map without adverting to the coincidence of these circumstances with the local geography. The distance from the lower point of Jamad to the confluence is from sixty to seventy miles<sup>155</sup>, and with three armies moving in separate divisions, encumbered with plunder, and obliged to make roads or find them, corresponding with the sinuosity of the river, eight or ten miles of a right line is fully equivalent to the road distance of each day's march. Pliny says, the fleet passed down the river at the rate of six hundred stadia a-day. Q. Curtius<sup>156</sup> mentions expressly in this part of the passage, that the rate was only forty.

<sup>153</sup> Strabo and Curtius make Sopíthes and the Kathêi the same. The site of the Kathêi is known. They were between the Hydraôtes and Hy'phasis to the southward of Lahore. Arrian makes them different; but if Sopíthes was in the angle between the Hydraôtes and the Hy'phasis, Hephéstion must have passed two rivers to reach them.

<sup>154</sup> Major Rennell supposes only five days from Nicêa to the junction.

<sup>155</sup> Arrian from Megásthenes says, at Cambístholi or Astrobæ. Which of the two is right seems hard to discover. See p. 317.

<sup>156</sup> Rennell's first map, 75; second map, 70. De la Rochette, 57.

<sup>156</sup> Vol. ii. p. 691.



Freinshem, in order to reconcile so glaring a contradiction, supposes four hundred <sup>157</sup>; but if seventy-five <sup>158</sup> or fifty miles is too much, and five is too little, some other remedy must be sought. It is true, as Major Rennell observes of the Ganges, that a passage of fifty <sup>159</sup> or sixty <sup>160</sup> miles a-day is easily performed when the river is swoln; but this fleet was to accommodate the army, and no precipitation of this sort can be allowed. Forty stadia, or five miles, continued for eight days, gives indeed only forty miles, but the deficiency is more tolerable than the excess, and if it might be permitted to invert the numerals of Q. Curtius, and read LX. instead of XL. <sup>161</sup>, the repetition of sixty stadia for eight days gives sixty miles, a distance not greatly differing from Rennell's corrected map, consistent with probability, and correspondent to the ordinary progress <sup>162</sup> of an army in similar circumstances.

<sup>157</sup> By reading quadringenti for quadraginta. See Curt. in loco.

<sup>158</sup> As the whole of this narrative is taken from the 6th book of the History, we ought perhaps to estimate the stadia by the Olympic measure, and not by the short stadium applied to the Journal.

<sup>159</sup> Major Rennell, from his Latin Itinerary, supposes twenty miles a day's passage for a boat on the Indus.

<sup>160</sup> Rennell supposes thirty-eight miles a-day down the Indus, p. 290, second Memoir.

<sup>161</sup> This is a conjecture not authorized by the text of Curtius, as given either by Freinshem or Snakenborck, for both read quadraginta at full length. Whether the manuscripts they followed have the numerals XL. is not expressed; but those who are conversant in Greek or Latin numerals will allow some latitude for correction.

<sup>162</sup> The march of Timour from Jamad to the confluence in the very track that the de-

tachment under Hephæstion should have marched, is thus described by Cheref-eddin, tom. iii. p. 52. Translation of Petis de la Croix.

Après avoir achevé heureusement l'affaire de Chehabeddin, l'on marche *cinq ou six* jours, au bord du fleuve Jamad (Hydaspes), et . . . on alla camper sur le bord de la riviere de Genavé (Akesines), a une forteresse, vis à vis de laquelle se fait le confluent de la riviere de Jamad avec celle de Genavé, *i. e.* the Hydaspes with the Akesines.

Five or six days march of a Tartar army, with an object in view, is fully equal to the eight days allotted to the Macedonians, whose army was moving in three divisions, and one of these under Hephæstion detached on an expedition.

Lord Cornwallis, in his march from Bengaloor to Seringapatam, moved at the rate of nearly nine or ten miles a-day. See Major Dirom's map.

The Hydaspes and Akesínes at their junction are both forced into a channel too narrow for their united streams; the rapid eddies and turbulence which arise necessarily from such a cause afford ample scope for the tumid eloquence of Q. Curtius. The more moderate language of Arrian will, at the same time it verifies a fact, give greater pleasure to the reader who prefers truth to embellishment.

Where these two rivers meet, says Arrian, one channel very narrow receives the waters of both. The stream becomes violent from confinement, and whirls in eddies terrible to behold. The roar and tumult of the water are prodigious, and heard long before you reach the spot. When Alexander approached the confluence, neither he, nor those on board his fleet, were uninformed of these particulars; yet, while they were still at some distance, upon hearing the noise and dashing of the waters, the rowers rested on their oars, the modulators were silent with astonishment; but as the stream carried them nearer, the commanders recalled both to their duty, and directed them to exert their utmost strength, that the vessels might not be caught in the eddies, but pushed through by dint of force. It turned out, however, that the transports from their built, by yielding to the eddy, escaped with little injury, except the alarm excited in those on board; but the gallies, which from their length and sharpness were less adapted to encounter a danger of this sort, suffered greatly, and some, from having two banks of oars and the difficulty of managing those which were nearly on a level with the water, were exposed to the most imminent danger<sup>103</sup>.

<sup>103</sup> Les vagues qui se forment en ce lieu la font paroître une mer agitée. Cheref-eddin, vol. iii. p. 52.

Alexander's vessel, however, escaped to a projecting point on the right hand shore, which covered him from the violence of the stream; but he saw two of his vessels sink, and with difficulty saved such of their crews as were able to swim. Many more of the galleys were damaged, which caused a delay here of some days in order to refit them; and while the repair of these was going on, Hephêstion, Cráterus, and Philip, joined with their respective forces.

Alexander now ordered the corps of Polysperchon<sup>164</sup>, the mounted archers, and the division of Philip with the elephants, to be conveyed over the Hydaspes, and proceed under the command of Cráterus, while he landed himself and ravaged the neighbouring territory, to prevent succours being sent to the Malli. He returned again before the fleet moved, and then ordering Nearchus to fall down the river for three days, he once more formed his army into three divisions; directing Hephêstion to be five days in advance, Ptolemy to follow three days march in his rear, and both them and Cráterus to join the fleet again at the confluence of the Akesínes and Hydraôtes; while with a fourth division he entered the country of the Malli himself. It was in this expedition, attended with a variety of circumstances not connected with our present subject, that he was himself wounded in storming an inconsiderable fortress of the Malli. The territory of this tribe naturally suggests an idea that it may be the same as the celebrated province, or soobah, which takes its name from Moultan, a city well known for its situation and commerce in Europe as well as India.

<sup>164</sup> Τῶν Πολυσπέρχοντος τάξις; it was a part of the phalanx.

## IV. MOULTAN.

Longitude			Latitude		
from Greenwich by Rennell,	70	40	by Ptolemy,	-	31 15
add from Ferro,	-	17 40	by Rennell,	-	29 50
		88 20	by the Turkish		29 30
from Ferro by Ptolemy,	127	0	geographer,		
Ptolemy corrected by			Etval's	-	29 40 <sup>166</sup>
Gossellin,	-	90 4			

According to the rivers of Ptolemy, Caspíra on the Rhuadis ought to be Moulton upon the Ravee; but if it is so, his latitude is very erroneous, for he places it north of Bucéphala<sup>165</sup>,

<sup>165</sup> See Otter, tom. i. 407.

<sup>166</sup> It is by no means certain that Ptolemy placed Caspíra to the north of Bucéphala. It is true that in the catalogue of longitudes and latitudes, p. 172, the latitude of Bucéphala is only 30° 20'; that of Caspíra, according to the Greek text, is 32° 10', according to the Latin, 31° 15'; and thus, whether we follow the text or the interpreter, Caspíra should be north of Bucéphala.

But probably the numbers are corrupt both in the Greek and Latin; for in Book viii. in his description of his 10th map of Asia, which contained the delineation of India within Ganges, enumerating the principal cities of that region, he says, that at Caspíra the longest day is 14½ hours, at Bucéphala 14¼: now taking Ptolemy's obliquity of the ecliptic, *i. e.* 23° 46', these lengths of the longest day give the latitude of Caspíra 31° 23' 29", that of Bucéphala 33° 19' 51", *i. e.* almost two

degrees north of Caspíra. It is true that in this passage the numbers in the Latin translation differ from those of the Greek text, (which is the case perpetually,) making the longest day at Bucéphala only 14 hours; but I have little doubt that the error is in the translation, not in the text. In the Greek, 14½ hours is thus expressed in Ptolemy's usual notation,  $\alpha\pi\alpha\rho\ \delta\delta$ . The interpreter overlooked the second  $\delta$ .

I am not certain whether Ptolemy, in estimating the length of the longest day at different places, assumed the obliquity of the ecliptic as deduced from his own observations, or adhered to the estimation of Hipparchus, which he mentions in the *Almagest* as not differing materially from his own. Hipparchus's obliquity was 23° 51': with this obliquity the latitude of both places would come out a little more to the south, namely, Caspíra 31° 21' 4", Bucéphala 33° 17' 22". Bishop Hursley.

whereas it is near a degree to the south<sup>167</sup>. The foregoing estimation is consequently liable to all the objections connected with this error.

The fortress, however, where Alexander was wounded was not the capital, for it is as certainly on the north of the Hydraôtes, as Moulton is on the south. Major Rennell<sup>168</sup> has noticed this with his usual accuracy, and the testimony of Arrian is direct; for he says that Alexander, after having passed the Hydraôtes, returned and crossed it again after the flying enemy, who threw themselves finally into the fortress where this transaction took place. It is remarkable that the boundary given to the province of Moulton by the Ayeen Akbari should correspond with the limits assigned to the Malli by Arrian; for when Abu'l Fazil<sup>169</sup> says the Pergunnah of Shoor<sup>170</sup> joins the boundary of Moulton on the north, he evidently shews that this soobah extends to the north of the Ravee or Hydraôtes, and consequently comprehends the spot allotted for the situation of this fort among the Malli.

While Alexander was engaged in this expedition, the fleet had reached the confluence of the Akesînes and Hydraôtes; and hither, as soon as his wound permitted him to be removed, he was conveyed in a galley down the stream of the latter<sup>171</sup>. The transport of joy with which his troops received him, was

<sup>167</sup> See Ptol. p. 171, and Mercator's Map Asia, tab. x.

<sup>168</sup> Second Memoir, p. 97, Major Rennell places this nameless fort ten miles from the conflux of the Hydraotes and Akesines, below Tolomba.

<sup>169</sup> Vol. ii. p. 136.

<sup>170</sup> Shoor lies upon the Chen-ab or Ake-

sines, near the junction of that river with the Chelum (Hydaspes).

See in confirmation, Ayeen Akbari, vol. ii. p. 100.

<sup>171</sup> Alexander did not land at the actual junction of the rivers, but at the camp of Hephéstion, on the Hydraôtes, a small distance higher up. See p. 252. Ar.

some compensation for the dangers he had encountered ; and so little did the monarch himself seem to be ashamed of the temerity with which he had exposed his person, that he is said to have taken a Bœotian soldier into his favour, who, in his broad dialect, bluntly applied to him the sentiment of a tragic poet <sup>172</sup> :

“ He that would do great deeds must suffer greatly.”

Here he was joined by the other divisions of the army, and while he was under cure of his wound he received the submission of the Malli, now humbled by reiterated defeats ; and a deputation from the Oxy'dracæ, offering to become tributaries, and to send him a supply of men.

The Oxy'dracæ correspond both in name and situation with the district still called Outche, which is comprehended in the soobah of Moultan, and occupies the angle formed by the junction of the Chen-ab, or Akesínes <sup>173</sup>, with the Indus. It is somewhat singular that Arrian should mention these people as cantoned into departments, and their magistrates <sup>174</sup> as presiding in each separate canton, while the moderns distinguish them to this day by the appellation of the Seven <sup>175</sup> Towns of Outche <sup>176</sup>. These local circumstances continuing similar through so many ages, afford no less pleasure to the inquirer than confirmation to the veracity of the ancient historians.

This tribe must have been in a flourishing condition, for they furnished Alexander with a thousand men and five hundred <sup>177</sup>

<sup>172</sup> And Pindar : *ἰπιδ.*

*ρίζοντα τι καὶ παθὺν ἴσκειν.* Nem. 4. Str. 2.

<sup>173</sup> Ayeen Akbari, vol. ii. p. 136.

<sup>174</sup> *ἡγούμενοι τῶν πόλεων καὶ δι τομάρχαι.*

<sup>175</sup> See Tieffenthaler, vol. i. p. 118, and de la Rochette's map.

<sup>176</sup> Perhaps the orthography is, Owj. or Oudj. See Ayeen Akb. vol. ii. p. 100.

<sup>177</sup> I should rather read *πεντακοντὰ* fifty, than *πεντακόσια* five hundred ; but there is no infirmation of an error. The number is extravagant.

chariots, and their territory, with that of the Malli, was added to the satrapy of Philip. During the continuance of the army at this place an additional number of vessels had been built, and seventeen hundred horse were again embarked, with ten thousand foot, and a body of light infantry, and the whole ordered to fall down to the confluence of the Akesines with the Indus. It is here that Arrian mentions the junction of the Hyphasis with the Akesines, before that river falls into the Indus. But still he does not mark with his usual attention where the actual junction takes place, neither does he notice the arrival of the fleet at it, as at the confluences which precede and follow. This omission gives us room to doubt of the fact, and though de la Rochette has followed Arrian and Tieffenthaler in uniting the Biah and the Setledj with the Chen-ab before that river meets the Indus, there is still great reason to adhere to Major Rennell, who carries those two rivers with one stream into the Indus directly, without bringing them first into the Chen-ab. It occurs here likewise that the Akesines preserves its name after receiving these several rivers, agreeably to what Tieffenthaler observes of the modern Chen-ab.

The city of Moulton, anciently called Mulatran, which gives name to this province, and which is situated to the southward of the Ravee or Hydraotes, is considered as one of the oldest in India; it has a citadel and a wall of brick four miles<sup>17</sup> in circumference. The climate is hot in the extreme, the soil a burning sand, and rain is seldom known. A branch or canal from the Ravee, called Monan, approaches within one coss of the town; the Ravee itself is only two coss distance, and the

<sup>17</sup> Tieffenthaler, vol. i. p. 115. His miles are always coss; so that we may estimate the city seven or eight miles in circumference.

Indus twelve or fourteen. The junction of the Ravee and Chen-ab is distant twenty-five <sup>179</sup> miles, and that of the Chen-ab and Indus eighty <sup>180</sup>. It is not impossible that a town of the Malli should have occupied this site in the time of Alexander, but certainly not as a capital, or a place of importance; for the Macedonians were more ready to give consequence to the places they subdued, than to detract from them; but local circumstances by no means disallow of its being one of those fortresses <sup>181</sup> attacked by Alexander upon his first crossing the Hydraôtes, and before he recrossed that river, to the place where he was wounded.

From the junction of the Hydraôtes with the Akesînes the fleet now fell down to another station, at the point where the Akesînes with all its tributary waters is united with the Indus, waiting there for the arrival of Perdikkas, who had been employed in subduing the Abástani. The submission of another tribe named Ossádii had been received by a part of the fleet which had been built at Xathra and came down the Indus, while Alexander had been descending the Akesînes. Of Xathra and these two tribes nothing occurs to direct our inquiries but the mention of their names; and in regard to Xathra, the obscurity is of consequence; for there is reason to conclude, that these vessels which now came down the Indus were part of the fleet originally built on that river, and left there when Alexander transported the other part over land to the Hydaspes. Arrian mentions this division as consisting of gallies and transports newly built, but it is hardly credible that the whole <sup>182</sup> fleet had

<sup>179</sup> De la Rochette.

<sup>180</sup> Sixty-five miles. Rennell.

<sup>181</sup> Perhaps Βραχμάτιον τινὰ πόλιν, p. 242, Arrian.

<sup>182</sup> A similar conveyance of vessels overland appears, lib. vii. p. 300, from Phénicia to Thapsacus. Three Quadriremes, twelve Triremes, thirty Triaconteri, divided into



been carried over-land, and highly probable that part left behind had been augmented at Xathra. If we had any data to fix the position of Xathra on the Indus, it would afford great satisfaction to prove the length of the line of transportation, but Xathra is named only by Arrian, and does not appear in Ptolemy, Strabo, Diodorus, or Q. Curtius.

At the conflux of the Akesines with the Indus, Alexander fixed the establishment of a new city, of which, though we find no traces in modern accounts, we may naturally consider the situation as highly advantageous. A city fixed here would necessarily partake of all the commerce that passed up the Indus, to be distributed by means of the several sources above, from Candahar and Cabul on the west, to Tchamoo, and perhaps to Thibet, on the east; and being the centre where all these streams unite, must consequently derive equal emoluments from the commerce that passed downwards to the coast. The judicious choice of a site for this Alexandria (for such probably was its name) has been as little noticed by the historians as imitated by the native<sup>133</sup> powers of India; nothing is found in the Ayeen Akbari to prove the existence of any place of importance<sup>134</sup> at this junction, and the silence of travellers and geographers on the subject leaves the whole matter in obscurity.

parts, and brought over-land by a longer transport certainly than from the Indus to the Hydaspes or Chelum.

<sup>133</sup> Whatever local circumstances have contributed to the situation of Moultan, have united also in preventing the growth of a city at this confluence.

<sup>134</sup> No magnificent idea is requisite to conceive the building of cities in the east. A fort or citadel, with a mud wall to mark the circumference of the Pettah, or town, is all that

falls to the share of the founder. The habitations for the natives are raised in a few days or hours: and inhabitants are supplied either by force, or, if the place is commodious, by inclination. Timour, as well as Alexander, built cities in two, three, or five days. The sultan of Egypt insults Timour, by telling him that the cities of the east are built of mud, and ephemeral, ours in Syria, says he, and Egypt, are of stone, and eternal. Cheref-eddin.

Alexander remained here some time both for the establishment of the city, and to regulate the administration of the provinces, for at this junction he fixed the limits of Philip's satrapy, and the commencement of a new one for Oxyartes the Bactrian, father of his wife Roxána, which was to extend to Pattala and the coast. Python was joined in the commission with Oxyartes, and Philip was left at this new city with all the Thracians and other troops sufficient for the defence of the province.

V. SOGDI. BEHKER.

As we are now to leave the confluences of the respective rivers, which have hitherto served to direct us in the position of cities, tribes, and countries, a scene of difficulties opens which nothing but a desire of elucidating ancient geography would tempt me to explore at greater length than those who have trod the same ground before me. Our materials are scanty; for Arrian and Diodorus have only two short pages, Q. Curtius part of one chapter, and Strabo two or three lines. In all of them there is hardly a characteristic feature to distinguish one place from another; time and distances are equally disregarded by all. Added to this, I feel some repugnance in deserting the guidance of my constant director Major Rennell, by fixing the Sogdi<sup>ns</sup> at Behker, and Musikánuš at Sewee; but I do this

<sup>ns</sup> Though I desert Major Rennell, I have the approbation of d'Anville.

La ville royale des Sogdi, . . . ne peut mieux se rapporter qu' à Bukor, qui a servi de résidence à des rois de cette contrée.

Renfermée dans une isle deux villes sur les rives opposées Sukor et Louhri l'accompa-

gent. *Geog. Anc.* vol. ii. p. 343.

But d'Anville himself is mistaken about Sindomana, *ibid.* and *Eclaircissemens*, p. 36; *Antiq. de l'Inde*, p. 32.

De la Rochette follows d'Anville in placing Moosicánuš at Sewee.

upon the authority of Strabo's brief account, who affirms that the seat of Moosikánu's government was very near <sup>186</sup> the Pattalène.

Let us first take a view of the country as it exists at present. The Indus rolls down from the confluence of the Chen-ab or Akesínes to Tatta, four hundred <sup>187</sup> miles in one channel, with hardly a single point to characterise one part of its course from another, except the island Behker. Behker is the termination of the modern province of Moultan; the general term for the tract below is Scindy; the title it bears in the enumeration of the Mogol provinces is the Soobah of Tatta; but in the time of Akbar this Soobah was added to that of Moultan. The Soobah of Tatta is divided into five circars. I. Tatta, the Páttala of the ancients. II. Hajykan, running parallel to the Indus, and extending north above Behker. III. Sewistan, between Behker and Tatta. IV. Nusseerpoor, extending east from the head of the Delta; and, V. Chucherhaleh, (as well as I can collect,) extending from the eastern mouths of the Indus along the coast towards the bay of Cutch. We have therefore two principal positions on the river, between the confluence and the Pattalène; Behker in Moultan, and Sewee in Tatta. We have likewise two governments named in ancient history, that of the Sogdi and of Moosikánu <sup>188</sup>. I shall consider <sup>189</sup> each more particularly hereafter; but at present these circumstances will afford some reason to conjecture that these circars are natural divisions of the country, and that the reason of this distribution existed

<sup>186</sup> I believe not *near*, but *next to*.

Πρὸς αὐτῇ δ' ἦδη τῇ Πάτταλῳ τὴν τε τῷ Μωσι-  
καυῷ λέγουσι, καὶ τὴν Σαβοῦτε Σινδοταλίαν, καὶ ἴτι τὴν  
Πορτικαυῷ.

<sup>187</sup> Three Hundred. De la Rochette.

<sup>188</sup> Oxykánus was not on the Indus.

<sup>189</sup> Throughout the history of Ferishta, as given by C. Dow, I find hardly a single town to add to Tatta, Sewan, Behker and its dependencies. See vol. ii. p. 306, et seq.

as strongly in former times as at the present day; if so, the ancient tribes specified by the historians possibly occupied the same ground as the modern circars.

The nature of the river itself will suggest other reflections, which will tend to throw farther light on the subject. For the Indus, although it resembles the Nile<sup>100</sup> in forming the centre of a valley and watering a country where no rain falls, differs in some points more essential. The map is crowded with the names of ancient cities and modern villages on the banks of the Nile, while the Indus has only two places of importance, Behker and Sewee, in a course of four hundred miles.

The range of sand<sup>101</sup> hills on the east is the residence of the Ashambety<sup>102</sup>, while a chain of rocks on the west commences from the sea, and runs northward nearly parallel with the river till it joins those of Kandahar. All the ridges of Asia afford security to tribes of plunderers; those in the neighbourhood of Kandahar are the seat of the Aghwans, the conquerors of Persia and the desolators of India; and this range from the sea produces the Belootches, a tribe no less ferocious than the Aghwans. This range has likewise several branches; one more particularly that reaches the Indus near Sewee, and another which, I have reason to think, forms the boundary between Sewistan and Hajikan; and if there were any guide to direct me where to fix the limits of Hajikan<sup>103</sup>, I should make it the territory of

<sup>100</sup> Major Rennell, Postscript.

<sup>101</sup> Ayeen Akbari, vol. ii. p. 145. Tiefsenthaler.

<sup>102</sup> Called Jams at Tatta, when Hamilton was there. The Jams are robbers from the east: the Belootches, robbers from the west.

I suspect they are called so from the Arabic

and adopted Persian word, which signifies a multitude, to hord together, to collect. Mr. Jones.

<sup>103</sup> Hajikan likewise resembles Assaceni, but the site of that tribe does not accord.

Oxycanus, from similarity of sound, but I can nearly demonstrate that the lower branch in Sewistan was the territory of Oxykánus and Sambus.

From this account of the modern state of the river and the country, let us now return to the ancient historians; the order of transactions, allowing for the variation of the narrative, is the same in all. I. The Sogdi of Arrian are the Sábracæ of Q. Curtius, the Sambestæ and Sodraæ of Diodórus. We need not insist on the diversity of names, for it matters little; but the transactions which occurred, the voluntary surrender of the place, and the establishment of docks and arsenals, are all similar and accordant; and though Diodórus would make the Sambestæ and Sodraæ<sup>m</sup> distinct tribes, his transactions are too clear to leave a doubt. II. The Moosikánus of Arrian is the same both in name and order as in Q. Curtius, Diodórus, and Strabo. III. The Oxykánus of Arrian answers to the Présti of Q. Curtius, the Portikánus of Diodórus and Strabo. IV. And finally, the Sambus of Arrian has the same appellation in Diodórus, and is the Sabus of Q. Curtius, the Sabútas of Strabo. A situation is now to be found for these four successively; and if a reasonable degree of probability can be assigned for placing the three first, allowances must be made for the scantiness of materials, if it is impossible to arrive at demonstration.

After viewing this question in a variety of lights, I have persuaded myself that the Sogdi were at Behker, Moosikánus at Sewee, Oxykánus on the west of Sewee at the foot of the mountains, and Sambus on that range of mountains called Lukhy which extends from the great western range, and approaches the Indus at Sewee. The proofs or probabilities necessary to

<sup>m</sup> Dow gives a Sodra on the Indus, but without data to fix it. Vol. ii.

produce the same conviction in others shall be adduced as we pursue the course of the fleet down the river; but I cannot avoid noticing, that by the most cursory view of the map, a fort and dock-yard at the confluence of the Akesínes, the same at Behker, with a garrison at Sewee, and other citadels and docks at the head, and two lower points of the Delta, present a line of frontier exactly correspondent to local convenience, and the very nature of the country.

At the confluence of the Akesínes, Cráterus with the elephants and the greater part of the army was transported to the eastern side of the Indus, as the country on that side appeared more convenient for the march of an army; and Alexander dropped down with the fleet to Sogdi. The distance and the time employed are both omitted by Arrian; but if we place the Sogdi<sup>195</sup> at Behker, the distance appears from Major Rennell to be short of an hundred and fifty<sup>196</sup> miles. In the same order follow the Sábracæ of Q. Curtius, and the Sambestæ of Diodôrus; both describe this tribe as living under a republican<sup>197</sup> form of government, and defended by an army of sixty thousand foot, six thousand horse, and five hundred chariots; both specify the submission of this people without a battle, and Diodôrus adds, that the Mássani<sup>198</sup> and Sodræ were borderers on the river, who submitted at the same time. In the construction of a citadel and docks at this place<sup>199</sup>, all the three historians agree. Now though we may allow great scope for the amplification of Curtius and Diodôrus, we are still to consider these

<sup>195</sup> In a right line by the scale.

<sup>196</sup> Eighty. De la Rochette.

<sup>197</sup> Arrian says expressly, τὸ βασιλικόν.

<sup>198</sup> Massani and Sodræ are perhaps the modern Bekier and Sskier, in Sekier written

Suckor and Sunkar, we find the representative of Sogdi and Sodræ.

<sup>199</sup> Q. Curtius mentions an Alexandria four days lower down; but it must be referred to this place, as he names no nation or site.

Sábracæ as a tribe of consequence in the view of the historians, and I ask where is a position to be found for such a tribe in the course of this hundred and fifty miles before we arrive at Behker. Nothing can be more barren of names than the line of the Indus here in Major Rennell, or de la Rochette; and the discordance of those two geographers, being no less than seventy miles, adds still to the confusion and obscurity. Another consideration is, that Behker in the modern division of the province is a circar of Moultan; and where the Dooabeh<sup>""</sup> circars end, that of Behker begins: it follows, therefore, that Behker would necessarily be the first capital from the junction of the Akesínes, and naturally the site of the Sogdi or Sábracæ, the first tribe Alexander reached after leaving that junction.

## VI. BEHKER.

Longitude		Latitude	
by Ptolemy, from Ferro,	118. 00	Ptolemy, -	25 20 0
by Rennell, from Greenwich,	70 00	Rennell, -	27 33 0
add from Ferro, -	17 40 0	Oriental. Otter,	34 00
	87 40 0	De la Rochette,	27 27 0
Ptolemy corrected by Gossellin,	84 16 0		

I take the Binágara of Ptolemy for Behker, not only on account of its central situation between Moultan and Tatta, but its resemblance in point of orthography, for it is possibly Behh-nagar or Behk-nagar, in which form it approaches Behker-nagar; nagar being the usual adjunct to express a fortified

<sup>""</sup> A space between two rivers: Doo, two; Ab, water.-

place, and Ptolemy has in this neighbourhood, Agri-nagara, Ka-nigara, Nagar-anigramma, &c. &c.

According to the modern division, the circar or Dooabeh of Behker contains twelve mahls<sup>201</sup>, or places for collecting the revenue, which amounts to fifty-seven thousand five hundred and seventy-eight pounds sterling<sup>202</sup>, and furnishes four thousand six hundred and ninety horse, and eleven thousand one hundred foot. These circumstances are stated from the modern account, to shew how reasonably it will bear a comparison with the ancient, allowing for much exaggeration, and considering that India appears more populous in early times than since it has been desolated by invasions.

It would have been a fortunate circumstance if any of the historians had mentioned an island here, or in any part of the Indus between the junction of the Akesínes and Tatta; but their silence is unanimous. It will appear, however, that we have something more than conjecture to direct us, for Otter names Bekier, Sekier, and Tekier, as three places dependant on Mansura<sup>203</sup>; in which, though he is mistaken (for Bekier is

<sup>201</sup> The names of the twelve mahls are the same in Tieffenthaler and the Ayeen Akbari. If any one wishes to see what spelling can do to confound, he should consult both. Tieff. vol. i. 117. Ayeen Akb. vol. ii. 103.

<sup>202</sup> Reckoning the dam forty to a rupee.

<sup>203</sup> Mansura is a city encircled at a distance by a branch of the Mehran (Indus). The city itself stands on the western side of the main channel; for the Mehran in its descent separates into two streams at Calere, a day's journey from Mansura; the main stream passes to Mansura; the inferior turns to the north towards Sarusan, and then winds back again to

the west [read *east*], till it joins the main channel once more, about twelve miles below the city. Mansura is a mile both in breadth and length. Nub. Geographer, p. 57.

This description has led Mr. d'Anville into a great error, for the whole is represented on his map. The error arises from his making Behker and Mansura two different places, which the Ayeen Akbari proves to be the same; but d'Anville places Behker near four degrees higher up the stream, and this Mansura he places below Sihwan. Otter has fallen into the same error. Vol. i. 406, 407.

Major Rennell makes the isle thirty-five



Behker the same as Mansura), he is still right in regard to the other two, for Sekier is the Sunker of the Ayeen Akbari, and Tekier is the fort called in that work Alore, the Louheri of de la Rochette. Tekier is situated either at the re-union of the river after its separation to form the island, or just below it; and Sekier assumes a place at the point where the river divides. It is in Sekier, written Sunker and Suckhor, that I find the Sogdi of Arrian, the Sodræ of Diodôrus, the Sadracæ of Q. Curtius; and as Sunker and Alore are two out of the twelve mahls assigned to Behker by the Ayeen Akbari, this division has given rise to the distinction of them by Diodôrus into separate tribes. Some reserve is necessary in asserting that Alore and Tekier are the same, but it seems highly probable, because Tekier is not mentioned by the Ayeen Akbari; concerning Suckhor all testimonies are united. I conclude, therefore, that the Sogdi of Arrian comprehend the whole island and circar of Behker, and that the name is derived from the principal place in the circar at which the fleet arrived.

If this should not be deemed conclusive, I beg the reader to suspend his judgment till he receives additional reasons for fixing the seat of Musikânus; for the position of either to a certainty will give the respective situation of the other; and I must likewise observe, that the erecting of docks on an island is a natural convenience, while there is nothing on the higher part of the river to direct this operation more to one point than another.

miles in length, which does not differ much from Al Edrissi's account. Mansura is doubtless a Mahometan, and not an Indian title, for it expresses *victory* in Arabic. See Melchiz. Thevenot, tom. i. in Abulfedam, p. 19.

From this island of the Sogdi<sup>224</sup>, Cráterus was detached into Arachôsia and Drangiana; but as we hear of him again at the next station of the fleet, we must suppose that he only conducted a body of troops which was to penetrate into those countries by another route, and which was to connect again with the future march of the main army through Karmania. This design is perfectly consistent with Alexander's scheme of exploring these provinces by marches in various directions; and it is probable that Cráterus went no farther with this body than to mark out the line they were to pursue, and then returned to the main army. The reunion of these forces will be noticed in its proper place.

From Sogdi then, the Behker<sup>225</sup> of the Hindoos, the Mansura of the Mogols or Persians, Alexander hastened down the Indus to reach the city of Moosikánus, before he should be prepared for resistance. I have already said, that Strabo is my authority for placing Moosikánus lower down the river than Major Rennell; for Strabo says expressly, that his territory was near, or next to, the Pattalène; and a review of Arrian's account, short as it is, convinces me that, after the transactions which took place here are considered, the immediate arrival of the fleet at Páttala confirms the assertion, of Strabo.

<sup>224</sup> It is worthy of remark that the Nubian Geographer makes Mansura a centre of communication both east and west, p. 57, et seq.; and such it would naturally be in all ages, unless the city Alexander built at the main junction of the rivers had taken root.

<sup>225</sup> This island of Behker has two dependant places, Tekier and Sekier, so written by Otter, vol. i. 409. Frazer writes Buckar for Behker, Sunkar for Sekier. Treaty Nadir Shah.

To speak properly, we may consider Behker as equivalent to the capital Mansura, and the island; Suckor or Sunkar as a town in the island. The Nulla Sunkar or Sunkra is the most eastern arm of the Indus, and assumed in the treaty of Nadir with Mahomed Shaw as the boundary of their dominions. In this sense Nulla Sunkra is the channel that leads to Sunkar: it is the same as Bundar Lori or Loheri, which leads to Loheri, a town in the same district. See Purchas, vol. i. p. 236.

## VII. MOOSIKANUS. SEWEE. SIHWAN.

I fix upon Sewee for the residence of Moosikánus, because it is the head of the first circar of Tatta towards the north; and conceiving, as I do, that all these circars have their division or boundaries from nature, I am persuaded that the surest ground for fixing any ancient name is to consider the present distribution of the provinces<sup>206</sup>. Sewistan, the name of this circar, comprehends the country on both sides the river; but on the east there is probably little cultivation, as the tract tends toward the desert and the sand hills<sup>207</sup>. On the west, there are branches from the mountains extending towards the river inhabited by Belootches, and on one of these branches, or at the foot of it, may be placed the territory of Oxykánus, the Portikánus of Strabo and Diodórus. The termination of these three names suggests an idea that they contain some allusion to the country, or some mutual relation or connection. What will be alleged on this subject I give merely as a conjecture, and I refer it to the Orientalists for further illustration; but I cannot help thinking that I discover the name of the circar in every one of them.

Sewee is written Sevi, Sihouan, Sihwan, and Sehwan. It is not easy to establish the identity of these names to the same

<sup>206</sup> Behker is considered as central between Tatta and Moulton, and Sewee as central between Tatta and Behker, in the paper I received from Mr. H. Jones. Al Biruni is quoted by M. de la Rochette as a native geographer from Birun, near the Pattalène, who might throw great light upon these provinces,

if I had known where to find his work, or means to understand it. Sewistan, in every account that I have seen, is a circar highly commercial; and even in the present state of the country, pre-eminent.

<sup>207</sup> Tieffenthaler, vol. i. p. 122.

place; for though our maps make them the same, the Ayeen Akbari <sup>208</sup> mentions a chain of mountains extending from Sehwan to Seewee, regarding them as different places though in the same circar; and an obscure San <sup>209</sup> marked on the maps is possibly a corruption of Sehwan. Be this as it may, Sihwan is an appellation sufficiently known and acknowledged; and this word, I think, may be discovered in Moo-sihan-us, Ok-sihan-us, Por-sihan-us <sup>210</sup>, for the aspirate *h* passes into *k* in almost all words derived from Oriental languages <sup>211</sup>. The termination is Greek for sake of inflexion only, and the initial syllable will possibly be found in the Sanskreet to convey an idea of the relation in which they stand. This may be conjecture, and conjecture founded on etymology finds but little countenance at present. Neither do I wish to invalidate the assumption of Major Rennell, who supposes Oxycanus to be Hajykan. My chief reason for not coinciding in this opinion is, that Hajykan is higher to the north than would accord with the course of the transactions; but the circar may have been more extensive formerly, or may derive its name from a source which it is now impossible to trace. However this may be, I am convinced from much study of my authors, that the Indian names which occur in them are generally capable of being traced to native appellations existing at this day among the

<sup>208</sup> Vol. ii. p. 142.

<sup>209</sup> San may be, however, the Cahan which Tieffenthaler places in this circar, p. 122.

<sup>210</sup> It is remarkable that the reading of this name differs in Q. Curtius. Posticanus, Porricanus. I ask for a third reading: Porsicanus.

<sup>211</sup> The title of a Hindoo prince who reigned in this circar formerly, and whose go-

vernment extended from Mekran to Cachenire, was SIHAR. Tieffenthaler, vol. i. p. 122. writes Sihan.

In a situation lower down, near Birun, appears a district named *Mou* or Ebzat by Abu'l-feda. D'Anville Eclaircissement, p. 39. Wilford says, Moo in Coptick signifies *water*. The Coptick and Sanskreet are related. Marsh's Michaelis. vol. i. p. 417.

Hindoos at least, if not the Mogols; and whenever the society in Bengal for Asiatic researches shall direct their inquiry this way, they will discover more than can at present be calculated. I have proved this in regard to the names of the Panje-ab rivers; others have long seen it in the Malli, Oxy'dracæ, Peukaliôtis, Gurêi; and I am convinced that every name mentioned in the historians of Alexander will be found either in the history or memory of the Hindoos. I conceive that they exist in the Sanskreet at this hour, though they may be known to Europeans in a different form, derived from the Mogols, disfigured by the lapse of time, change of language, or variety of writing. I have the opinion of Major Rennell in confirmation of this idea, and his judgment I esteem decisive.

If we would now follow Alexander in his descent from the Sogdi to the territory of Moosikânus, we must apply to modern sources for information. Arrian gives neither time or distance, and mentions nothing of the country through which the Indus rolls; but the maps give us upwards of eighty<sup>223</sup> miles<sup>224</sup> from Behker to Seewee, and the Ayecn Akbari<sup>225</sup> informs us, that the country is a desert subject in summer to the Semoom, or suffocating wind. The term desert, however, must be qualified; for we are informed that the Indus changes its course, inclining some years to the east<sup>225</sup>, and others to the west; and that it is not so absolutely desert, but that there are villages<sup>226</sup> of herdsmen who change their habitation with the stream. This circumstance, recorded by Strabo, proves the attention of the observers, and the fidelity of the historian; for when we find in

<sup>223</sup> Seventy-five. De la Rochette.

<sup>224</sup> In a right line by the scale.

<sup>225</sup> Vol. ii. p. 143.

<sup>226</sup> North and south. Ayecn Akbari. The

same thing occurs at Behker; which favours the inclination given to the Indus by Major Rennell.

<sup>226</sup> Ayecn Akbari, *ibid.* Tieffenthaler.

Major Rennell<sup>217</sup> that he had similar information from an English traveller who verified the fact upon the spot, we obtain a local characteristic dependent upon the constant operation of nature, which fiction could not invent, and scepticism cannot doubt.

Moosikánus had sent no offers of submission to Alexander, but surprised by his sudden approach, and not prepared for defence, he advanced to meet the monarch upon his arrival, and surrendered his city, territory, and elephants, at discretion. The readiness of his submission, and the acknowledgment of his offence, procured him a ready pardon; for upon all occasions of this nature, the policy and generosity of the conqueror were in unison. He found the territory one of the richest<sup>218</sup> in this part of India, and the city so commodiously situated, that he determined to erect a citadel here, and leave a sufficient garrison for its support.

Even in the comparative wealth of this place I find reason to think Moosikánus must be fixed at Seewee rather than Behker, for the comparative wealth of the two cities continues still the same. According to the Ayéen Akbari, the revenue of Behker is only two hundred and thirty-two pounds<sup>219</sup>, while that of Seewee<sup>220</sup> is five thousand two hundred and eighteen.

The erection of the citadel was entrusted to Cráterus, whom we must consequently suppose to have returned from the detachment that marched into Arachôsia; and Alexander continued on the spot till it was completed. As soon as a proper

<sup>217</sup> See Rennell's Postscript.

<sup>218</sup> *Ἐυδαιμονιστάτω*. Flourishing is perhaps a more proper term.

<sup>219</sup> At forty dams to the rupee.

<sup>220</sup> Havelly is added to Seewee in this account. Ayéen Akbari, vol. ii. p. 105. Jumma.

garrison was appointed, an expedition was undertaken against Oxykánus commanded by the king himself; his forces consisted of the archers, Agrians, and the horse he had on board. If Arrian or any of the historians had told us on which side of the river the army moved to the east or west, higher up or lower down, we should have some ground to stand on; but we have now one circumstance only, that he was chief<sup>221</sup> of a district in the same country, and are left to our own conjectures for the rest. My conjecture is directed by the mention of Sambus next, as a satrap appointed by Alexander himself over the Indians of the mountains; for the mountains mentioned here correspond exactly with the range called Lukhy<sup>222</sup> in the Ayeen Akbari. They are a branch of that great chain which extends from the sea to Kandahar, one shoot of which reaches nearly to the Indus at Secwee, and affords a residence for a horde of Belootches<sup>223</sup> called Kulmany. On these mountains I have no hesitation to place Sambus; and if in the little light we have to direct us we obtain one position, there is no reasonable objection to fixing the other in correspondence to it. By the motion of the army immediately out of the territory of Oxykánus into that of Sambus on the mountains, it should appear that Oxykánus was on the plain at the foot of that range; and I contend that this plain and these mountains must be on the west of the Indus, because the desert and the sandy hills are on the east; and there is no authority, either ancient or modern, to shew that the range on the east ever approaches the river at any one point.

<sup>221</sup> Νομάρχης τῆς ταύτης γῆς, chief of a district in the country here, literally. I cannot conceive a more accurate expression for the chief of a circar, in reference to a soobah; or

for the chief of a mahl, in reference to a circar.

<sup>222</sup> Lakhi. Tieffenthaler.

<sup>223</sup> Ayeen Akbari, vol. ii. p. 115. Lond. edition.

But let us return to the course of the expedition. Alexander marched against Oxykánus because he had received no embassy or acknowledgment from him; he took two of his largest cities by assault, and in one of them Oxykánus himself; the plunder was abandoned to the soldiers, and the elephants only reserved for the public service. Several other cities surrendered without resistance; for by this time, says Arrian, the spirit of all the Indians was completely<sup>224</sup> subdued. Q. Curtius relates these circumstances with some shade of difference; Oxykánus, he says, was killed, and the people he calls Prësti. I desire to make but one more observation. Oxykánus was not on the river; for if he had been, Alexander need not have landed to march against him; he was near Sambus, and Sambus was satrap of the mountains. The conclusion is, therefore, that he was on the west of the Indus, and highly probable that his territory was at the foot of that range called Lukhy, consequently that Moosikánus and Oxykánus were both chiefs in the circar of Sehwan.

Sambus, the next object of Alexander's pursuit, has a variety of names, which prove only the doubts of historians, and obscurity of the transactions; for this chief is the Sabutas<sup>225</sup> of Strabo, the Sabbas of Plutarch, the Ambigarus of Justin, the Ambiras of Orosius, the Sabus or Samus of Q. Curtius. This recital is preserved in order to excite the attention of the Orientalists; for the idea of locality is probably attached to one or other of these appellations, if the true etymology can be obtained.

<sup>224</sup> Ἐδιδάκοντο τῇ γνέμῃ.

<sup>225</sup> See Snakenbrock's Notes on Q. Curtius, lib. ix. c. 8.



Sambus is represented as a satrap, or chief, of a tribe of mountaineers in the neighbourhood of Moosikánuš, and in hostility with that prince, as all the inhabitants of mountains constantly are with their neighbours on the plain. He had made his submission to Alexander, and received from him a fresh appointment to his satrapy<sup>226</sup>; but upon receiving intelligence that Moosikánuš had made his peace with the conqueror, he had abandoned his country and fled. For this flight no reason is assigned; but it is natural to suppose, that in the reconciliation of his enemy with Alexander he foresaw sufficient reason<sup>227</sup> to distrust both; and as conquerors allow none of their tributaries to be injured by any but themselves, Sambus might reasonably imagine, that either his future incursions would be prohibited, or his former ravages must be accounted for; in either case it was his interest to retire; and if he had submitted to Alexander before the reduction of Moosikánuš, it is probable that a participation in the plunder of that prince's province had been a principal inducement to effect his submission. When or where this transaction took place does not appear, but if we place it at Sogdi, the delay of Moosikánuš in making application for terms, is a sufficient motive for the conduct of his rival. Invasion<sup>228</sup> is too often fortunate in finding the jealousy

<sup>226</sup> We ought to consider Sambus as a native chief. The title of Satrap and the name of Satrapy afford a proof of his being considered as a subject of the Persian monarchy.

<sup>227</sup> See a similar conduct of the second Pôrus upon the reconciliation of the first Pôrus with Alexander. Pôrus on the Hydraôtes had been an enemy to the other on the Hydaspes, and had sent deputies to the camp as the army was advancing. After the victory,

and the admission of the conquered into favour, this second Pôrus fled upon the approach of the conqueror to his own territory. Lib. v. p. 223.

<sup>228</sup> In Asia, the success of every invasion ever attempted has been more owing to this cause than to the sword of invaders. Timour and Nadir Shah, both of them, were essentially indebted for their success to the "jealousy of the natives," and particularly to the "petty

of the natives favourable to the schemes of the invader, and the petty interests of opposite parties co-operating to their mutual destruction.

If Sambus was at the head of the tribe, I suppose, his submission was of importance; for the Belootches who possess the range of mountains called Luhky styled Kulmanies<sup>229</sup>, are said by the Ayeen Akbari<sup>230</sup> to consist of twenty thousand families, and are able to bring ten thousand horse into the field. Their country, though covered with hard rock, black and barren, must be interspersed with fertile vallies; for besides the horses raised for their own service and for foreign sale, camels also are produced here in great abundance, sufficient, not only for the supply of Scindi, but of the interior provinces. From this account of a single tribe, we cannot be surprised at finding the general influence of the Belootches extending far to the westward at present, or even to Cape Jask, according to Niebuhr<sup>231</sup>; neither can we think lightly of the Arabítæ who in-

"interests of opposite parties co-operating to their mutual destruction." I will venture to say, no European who has had a political intercourse with the natives of Asia will deny his assent to the truth of this sentence. Mr. Jones.

<sup>229</sup> Kilmaans in the language of the Afghans signifies blanket-shawls. *Quære*, whether this is not a *sagum*, from whence the name of Kulmanies? Paper furnished by Mr. H. Jones,

Who adds an observation of his own, that Kalaamaun may be derived from Kalaa, a castle or fastness, and Manaudan, to abide or dwell in.

<sup>230</sup> Here [near Tatta] the northern mountains form several branches, one of which runs to Kandahar; another branch commencing on the sea-coast goes to the town of Kouhbar, where it is called Ram Gur, and from thence

proceeds to Sewistan, where it is called Lukhy. Here are a considerable tribe of Belootches called Kalmany. They are twenty thousand families, and can raise ten thousand horse. Ayeen Akbari, vol. ii. p. 115. Lond. edit. May not this Ram Gur or fort Ram be the Rhambacia of Arrian?

<sup>231</sup> By Niebuhr's account of the Arabs, who have in all ages passed the gulph of Persia towards the east, it would be no difficult matter to form a connection between the Arabs and Arabítæ; but Niebuhr does not make the same distinction of Brodia and Bloachee which Porter does, seeming to consider all the wandering tribes in Mekran as Belootches.

Niebuhr is certainly mistaken. The Baloges (so written in Asia) are a tribe of Afghans. See As. Dis. vol. ii. p. 127. Mr. Jones says, the term signifies *acorn-eaters*.

habited the same tract in the age of Alexander, and had the same means of making themselves either feared or respected. Q. Curtius<sup>232</sup>, from Clitarchus, states the number of natives who perished by the Macedonian invasion at eighty thousand, besides prisoners; an exaggeration doubtless, but still indicating the relative magnitude of the tribe; and that it was more numerous in the time of Alexander we may conclude; for if the plain country was more rich and populous, the number of banditti maintained out of its spoils would be larger in proportion.

In the *Sindimána*<sup>233</sup> of Arrian, the capital of Sambus, I find an allusion to Scindi, the most general and common name of the country on both sides the Indus<sup>234</sup>; and though there are strong objections to placing any city of importance sufficient to

<sup>232</sup> The whole account in Q. Curtius is confused as usual. For first Alexander enters the country of Sabus, and then falls four days down the river to attack his capital. This is perhaps an error from want of distinction between *Sindonália* and *Harmatélia*. See Arrian, p. 254. As to the eighty thousand slaughtered, I doubt all ancient numbers, but none more than those of Q. Curtius.

<sup>233</sup> The best MSS. read *Sindimána*, not *Sindomána*. Gron. Arrian, p. 254.

<sup>234</sup> The Nubian Geographer has Scind and Hind for Scindi and Hindostan, and Sin for China. Marco Polo, who calls China Mangi, from the *Mancheux*, then masters of the empire, adds that the sea round this empire containing the Moluccas, and all as far as Japan, is called *Mare Cin*, that is, with the Italian pronunciation, Cheen; and that the natives of Japan call the empire Cin likewise. (Lib. iii. c. 4.) See also Gaspar de la Cruz, in *Purchas*. vol. iv. p. 166, who derives it from *Cochinchina*. The Arabick writers received

Sin or Sinæ from Ptolemy, the Portuguese received their terms from the Arabs, and the rest of Europe from the Portuguese. The Arabs consider the great peninsula of Malacca as Cheen, and China as Ma-Cheen. Mr. H. Jones adds, in the oldest Arabic and Persian manuscripts I have ever seen, China is called Cheen. Cheen and Maheen, as well as their prince Fugfoor, are familiar to every one conversant in Oriental literature. Not having Timour's institutes at hand, I quote from memory; but he has a passage something like the following: "And I have heard that there are seven kings, whom on account of their greatness they call not by their names. The king of Rome they call Keisar, and of Cheen and Maheen Fugfoor," &c.

The Ayeen Akbari confirms Mr. Jones's assertion. Vol. ii. p. 7. The ancient writers of Hindostan call Pegu Cheen; and hence perhaps all beyond Pegu was Cheen or Ma-Cheen.

be considered as the head of Scindi in the mountains, it is not assuming too much to suppose that the Belootches might have a city <sup>235</sup> at the foot of them. I speak with great diffidence upon the identical situation of Moosikánuš, Oxykánuš, and Sambus; but I have no doubt about the settlement of them all in Scewistan and the mountains adjacent; and I maintain that Musikánuš cannot be at Behker, as there is neither mountain or hill that approaches the river near that island. If M. de la Rochette's <sup>236</sup> Map can be depended upon in regard to this circar, his disposition of Lukhy or Lacki exactly corresponds with the topography I wish to adopt.

Sindimána made no resistance, for though Sambus had fled, he had no hostile designs against Alexander. He was probably alarmed for his personal safety on account of the submission of Musikánuš; but the gates of the city were open, and the officers of the fugitive chief delivered up his treasures and elephants without hesitation. From hence the army advanced to another fortress called the City of the Bramins, and as Diodórus mentions his Harmatêlia with the same attribute, it is doubtless the same. This city is said to have revolted, by which we may understand that it had been included in the original submission of Sambus, and upon his flight prepared to defend itself. It was taken without difficulty, and the Bramins, who were the advisers of resistance, were put to the sword. While these transactions were going on, intelligence was brought that Musikánuš had revolted. Python, now satrap of the province, was ordered to proceed against him, while Alexander seized the cities

<sup>235</sup> A tribe called Tehery is placed at the foot of this territory, in the *Ayecn Akbari*, by Faden.  
vol. ii. 115. Lond. ed.

<sup>236</sup> See his Sheet Map of India, published

in his territory. These, we may conclude, lay between the country of Sambus and the river, and lower down than the residence of Moosikánus; but whether Alexander<sup>227</sup> returned thither, or joined the fleet below, does not evidently appear; he found Moosikánus, however, a prisoner in the hands of Python, and executed him with the Bramins, who were the promoters of his revolt.

While Alexander was preparing for the prosecution of his voyage, he dispatched Cráterus, at the head of two divisions of the phalanx and a body of archers, with orders to take up on his march such of the companions and other Macedonians who had before been ordered to proceed through Arachôsia and Drangiána. The whole of these forces, with the elephants, were to direct their course by an inland route to Karmania, and join the main army again in that province. The primary object of this route appears evidently to be in correspondence with the plan Alexander had laid down for surveying and exploring the extensive provinces of his empire; and a secondary design suggests itself, which is, that he was already acquainted with the sterility of Gadrosia, which he intended to encounter himself, and therefore lessened the hazard of distress in proportion to the diminution of his numbers.

During this interval, Mêris<sup>228</sup>, the chief of Páttala and the Pattalênè, came up the river, in order to make his submission,

<sup>227</sup> Μουσικάνος τι αἰγεται πρὸς Πύθωνα, implies that Musikánus was brought in. If, therefore, Alexander was now in his city, Musikánus had left it and fled into the country, from whence he was now brought as a prisoner. Alexander executed him ἐν τῇ αὐτοῦ γῇ, which does not quite imply his city, but his territory.

<sup>228</sup> We have the name of this chief from Curtius; and I preserve all names for the investigation of future inquirers.

I will not venture to say more than that Mæris is so like the modern name *Meer Reis*, امير ريس as to strike me with a most forcible conformity. Mr. Jones.

and to surrender himself and his territory to the disposal of the conqueror. His offers were graciously accepted, and he was sent down again to his government with directions to prepare every thing for the accommodation of the army upon its arrival.

The proper dispositions were now made for departure. He-phêstion was ordered to take the command of the main body not embarked, and move downwards on the east<sup>239</sup> side of the river, while Python conducted the Agrians and light-horse on the west. The king proceeded with the same troops on board as before. He had advanced only three days, when intelligence was brought that Mêris had left Pattala, and fled into the desert with the greater part of his people. The progress of the fleet was immediately quickened, in order to obviate the difficulties which might arise from this defection; but before it reached Páttala, the city was without inhabitants, and the country without husbandmen.

I cannot however enter upon the Delta, without recalling the attention of the reader to the geographical<sup>240</sup> difficulties we have already encountered; for in the passage down the river I find every circumstance to corroborate the position I have assumed from Strabo, and the reasons which induce me to place the

<sup>239</sup> This is inferred from the commission Python received to collect inhabitants for the cities already fortified; and which can be no other than those Alexander had taken and established lately.

<sup>240</sup> M. de la Rochette cites Al Biruni as a native writer, whose authority ought to stand high in regard to the geography of this country. But by a note in the *Ayeen Akbari*, (vol. i. p. 43, Lond. ed.) I find Abu Rihan,

surnamed "Al Khovaresmi-Al Birouni," was a native of the city of Biroun in Khovaresm or Chorasmia. He was, however, an excellent astronomer, and travelled in India for the space of forty years. He published a complete system of geography, which he dedicated to Sultan Massand the Ghaznvide, about the year 1029. This account of Al Birouni is from Herbelot.

Sogdi at Behker, and Musikánus at Sihwan. The testimony of Strabo<sup>241</sup> is positive, that the territory of Musikánus joins the Pattalênè; it is upon this testimony that I first found reason to dissent from Major Rennell, and upon which I build the whole explication, detailed perhaps too much at length for the ordinary patience of readers, but of great consequence to historians and geographers, and highly conducive to the elucidation of our classical authorities. I must now observe that Major Rennell's map gives an hundred and forty miles, and de la Rochette's an hundred and fifty, by the scale, in a right line from Sihwan to Tatta. This, with the sinuosity of the river, may be estimated at two hundred miles; and if we should now add eighty<sup>242</sup> or ninety miles more to carry back Moosikánus to Behker, I ask what reference can Arrian's 'three days' voyage have to such a distance?—but there are more than three days;—for he proceeded three days, and after that hurried down to Páttala. I allow this, and I will allow two or three days more for the rapid part of his course; but I must observe, that for the first three days he could not proceed more than fifteen, or at the utmost more than twenty miles a-day, if he kept pace with the forces on shore; and after we have taken sixty miles out of an hundred and fifty or two hundred, we leave a sufficient residue for the conclusion of his course, when he may be supposed to have proceeded with the fleet alone, leaving Hephéstion and Python to follow with the greatest dispatch in their power. All these circumstances considered, there is every reason to conclude that Arrian is in harmony with Strabo; and as both these authors

<sup>241</sup> Lib. xv. p. 701. Πρὸς αὐτὴν τῇ Παττα-  
λαινῇ, ad ipsam Pattalenam.

<sup>242</sup> One hundred or one hundred and twenty,  
allowing for the course of the river.

drew from original sources, whenever they agree, little attention is due to Diodôrus, Q. Curtius, or Plutarch. Upon this occasion, however, though there is some confusion, there is nothing in any one of those writers contradictory to the deduction here made.

It may be objected, that by placing two chiefs in this province, and a third on the mountains near it, we comprehend too much in proportion to the space allotted; but by the revenue Akbar derived from this soobah in general, and from the circar of Seewistan only, there is reason to suppose, that as long as there was any commerce upon the Indus all these circars were rich, and all the parts of them cultivated which were capable of cultivation. There is still greater reason to believe, that in the early ages they were all more populous and more opulent; for a number of small states, such as appear every where during this irruption of the Macedonians, universally indicate <sup>243</sup> population, commerce, and wealth. In the state of India, at this day, every chief who has a fortress is a khan or sovereign, and perhaps at this very instant there may be more than two such sovereigns in this identical district. It is Seewistan itself that the Ayeen Akbari specifies as having forty thousand vessels on the Indus, and its revenue as amounting to forty-eight thousand five hundred and eighty-three <sup>244</sup> pounds. It is probably not less than two hundred miles in length by an hundred and eighty in breadth, and contains nine mahls or subdivisions; these are fully equivalent to the territories or cities,

<sup>243</sup> In the ancient world, Greece, Italy Holland, Switzerland, America.  
(before the Romans were masters), Sicily, and <sup>244</sup> At forty dams to the rupee.  
Gaul, are instances. In the modern world,



which two such chiefs as Moosikánus and Oxykánus can be supposed to have possessed.

But a weightier charge may be alleged against me, for setting up my opinion in opposition to Major Rennell. No one can bear ampler testimony to the accuracy of that able geographer than myself, for no one has studied his map and his memoirs with more attention; and if I dissent from him in this one instance, I do it with that deference which is due to his abilities, and the superior opportunities he has had of obtaining information.

Before we proceed to Pattala, I must mention a few circumstances communicated to me by favour of Mr. H. Jones, from a gentleman who had been resident for the East India Company at Tatta. 1. That the influence of the Abdallee government, in 1794, extended over the Delta or Páttala of the ancients; that the Sirdar Futti Ali had kept his residence at Tatta, and maintained himself there for twenty years, but was daily in expectation of being overpowered by Salem Shah, sovereign of the Abdallees or Durannis. 2. That Behker, which lies between Moultan and Sewistan, is now in ruins. 3. That Sewistan, half way between Behker and Tatta, is separated from Behker by a jungle or forest; it is still productive of excellent horses for cavalry, horned cattle, grain of all sorts, cotton, indigo, sugar, saltpetre, assafetida. 4. That Sind is an open town, 70 coss<sup>245</sup>, or 105 miles, above Tatta, answering to the Sindimâna of Arrian. 5. That the Kulmanies and Belootches are tribes of Aghwans; brave, but impatient of discipline, thievish,

<sup>245</sup> This paper reckons the coss in Scindi at  $1\frac{1}{2}$  mile.

treacherous, and inhospitable. 6. That the navigation of the Indus is now abandoned by the Cabul and Persian merchants, from the unsettled state of the country. Lastly, This account, which comes down as low as 1794, furnishes many particulars in correspondence with the detail we have been engaged in, and nothing to contradict the historians of Alexander. The invasion of another conqueror, who could reduce the whole under any form of regular government, and open the communications again, would be a benefit to the country, instead of an injury or oppression; and if the Abdallees should in this instance tread in the steps of the Macedonians, one general despot who should govern the whole, and for his own interest protect it, would be better than a variety of petty tyrants who desolate each other's territory, without obtaining security for their own; or the predatory incursions of the barbarous tribes, who not only rob, but annihilate the industry of the merchant and the cultivator.

I shall here also explain a geographical problem, which, though not absolutely connected with the progress of Alexander, pertains immediately to the country where we now are. Mr. d'Anville and Major Rennell both express their surprise at finding a tract called Indo-Scythia <sup>26</sup>, in Dionysius, Periegætes, Ptolemy, and the author of the *Periplus* <sup>27</sup> of the Erythræan Sea. This tract seems in their opinion to extend upwards on the western <sup>28</sup> side of the Indus, and its inhabitants are by some

<sup>26</sup> Indo-Scythia belongs to the lower part of Scindy, according to d'Anville. *Anc. Geo.* vol. ii. p. 346. *Eclaircissements*, p. 42.

The *Periplus* throughout applies the name of Scythia to Scindi.

<sup>27</sup> Perhaps d'Anville, by including Minnagara in it, (a constant mistake of his about Mansoura or Behker,) is disposed to extend it on the east side of the Indus.

means or other to be drawn out of Scythia or Tartary; but I conceive the whole to be an ancient error of the simplest nature. We find in this tract two tribes of Belootches, one called Sethians, and the other <sup>249</sup> Hendians <sup>250</sup> or Sindhians, which, though ill defined, seem by their names to be one tribe on the mountains and the other on the river; we find a third tribe of Belootches lower down, and nearly in the parallel of Tatta, called Nomurdies, who can raise three hundred horse and seven thousand foot <sup>251</sup>. If then we may be allowed to add antiquity to these names, the Nomurdies and Sethians will be metamorphosed into Nomades and Scythians without hesitation; and we shall find the Indo-Scythians of Dionysius and Ptolemy in the Hendo-Sethians of Abu'l Fazil, without taking a flight with Mr. d'Anville to bring Huns out of Tartary, in order to set them down on the banks of the Indus.

<sup>249</sup> The river Arabis, at which we shall soon arrive, has the name of Hend in d'Anville and de la Rochette; possibly, therefore, the Hendians and Arabitz are the same.

<sup>250</sup> Ayeen Akbari. Tieffenthaler, vol. i. p. 119.

<sup>251</sup> Ayeen Akbari, vol. ii. p. 142.

## VIII. PA'TTALA.

Longitude			Latitude		
by Ptolemy, from Ferro,	112	50 0	Ptolemy,	21	0 0
by Rennell, from Greenwich,	67	36 0	Rennell,	24	47 0
add from Ferro,	-	17 40 0			
		85 16 0			
Ptolemy corrected by Mr. }		80 0 0			
Gossellin's method,					
Ayeen Akbari, - -	102	30 0	Ayeen Akbari,	24	10 0
Otter, {	Abul-feda, -	92 31 0	De la Rochette,	24	43 0
	{ Etvals, - -	92 30 0			

Rennell's estimation is taken from Braminabad, where probably are the ruins of Páttala.

We are now to enter the Pattalênè, where fresh difficulties occur, which, if they cannot be conquered, may be greatly diminished by a faithful comparison of our authorities.

Páttala, in the Sanskreet, signifies the region<sup>161</sup> below, or Hell<sup>162</sup>. If we are disposed to interpret this appellation in a good sense, we may suppose the Hindoos signified by it, the country watered by the Indus in the lower part of its course. But if we prefer the other sense, there will be nothing improper

<sup>161</sup> Maurice Ind. Ant.

<sup>162</sup> See Wilford As. Dis. vol. iii. p. 84, and 161. In the latter, by a supposition that the

deities there mentioned fled into Lower Egypt, instead of *hell*; Páttala would in Egypt also be the Hindu term for the Delta of the Nile.

in the application; heat and burning sands, and want of rain, all justify the allusion; and the entrance into this country from Hindostan, through the desert of Behker, or the other desert<sup>34</sup> still more extensive, parched, and dangerous, in the route from Guzerat, suggests ideas of hell with great facility to the mind of an Hindoo.

The Pattalênè is a Delta, like the Lower Egypt, but the dimensions of it seem very ill defined. The base of this triangle lies nearly north-east and south-west; and if it were possible to give the extent of it exactly, we should obtain a great desideratum in geography. Ptolemy and the author of the *Periplûs* assert, there are seven mouths to the river, and the modern name of Divillee<sup>35</sup> is said to have the same allusion; but although Alexander navigated the two extreme branches east and west; and though there is reason to believe that the commerce on the Indus passed up and down both these, if not some of the others, in ancient times; I have never yet met with a traveller or voyager who passed up the eastern branch except Alexander himself. The extent between the two outer branches is given by

			Miles Eng.
Arrian, at	-	1800 stadia,	- equivalent by d'Anv. stad. to 113
Pliny <sup>36</sup> ,	-	220 Roman miles,	201
Rennell's first memoir,		210 English miles,	210

<sup>34</sup> See the passage over this desert by Mildnall in Purchas, vol. i. copied into Rennell's Map.

<sup>35</sup> This is said by Hamilton, but I doubt the construction, and much suspect that Divillee has an allusion to the *insulated* ground formed by the several branches of the river.

<sup>36</sup> By the short stadium of d'Anville, 1800

stadia produce nearly 112 miles English; and by the common stadium of eight to a mile Roman, the same number produces 225 Roman miles. Allowing for the difference of the miles, can there be a stronger instance to prove the conclusion of d'Anville, that both Arrian and Pliny read 1800 stadia in Nearchus?

		Miles Eng.
Rennell's second memoir,	150 English miles, equivalent by d'Anv. stad. to	150
D'Anville,	30 leagues $1\frac{1}{2}$ degree,	104
Dalrymple <sup>37</sup> , Pritty's chart,	108 geog. miles,	125
Dalrymple, by another chart,	124 geog. miles,	143
De la Rochette,	118 English miles,	118
Rennell's map, by scale,	170 English miles,	170
Ptolemy <sup>38</sup> ,	3 degrees 10 minutes,	215

In the disagreement of these several accounts, none of which, as far as comes within my knowledge, are founded on astronomical observation, nothing appears nearer approaching to probability than the estimation of Arrian; it is likewise, per-

<sup>37</sup> Measured from Pandrumme to Laribundar. Allow for Ptolemy's degrees in latitude 24.

<sup>38</sup> It is not easy to determine what the distance was, according to Ptolemy; but certainly it was less than it is reckoned here. The longitude of Sagapa, (the extreme western mouth,) according to Ptolemy, was  $110^{\circ} 20'$ . In these numbers the Greek text and Latin translation agree; but the longitude of Lonibari (the extreme eastern mouth) is very doubtful. The Greek text gives  $110^{\circ} 20'$ ,  $\mu\mu$ , but these numbers are unquestionably corrupt, which appears by comparing them with the longitudes of the intermediate mouths. The emendation which naturally occurs is for  $\mu\mu$  to read  $\mu\mu$ , i. e. for  $110^{\circ} 20'$ ,  $113^{\circ}$ ; and according to this conjectured emendation, the difference of longitude of the extreme mouths should be no more than  $2^{\circ} 40'$ ; but the Latin interpreter gives the longitude of Lonibari  $113^{\circ} 30'$ , as if the reading of his Greek text had been  $\mu\mu$ : thus the difference of longitude is doubtful. But whichever estimation of the difference of longitude we adopt, whether  $2^{\circ} 40'$  or  $3^{\circ} 10'$ , the distance to be deduced from the assumed difference of longitude is to be computed according to the length of a degree upon the parallel of  $24^{\circ}$  of latitude. Now

upon this parallel the length of a degree is no more than 63 English miles, with a very inconsiderable fraction ( $63.034$ ); hence, if the true difference of longitude was  $3^{\circ} 10'$ , (which Dr. V. assumes,) the distance was no more than 199.6 miles; but if the true difference of longitude was only  $2^{\circ} 40'$ , the distance was no more than 168.1 miles, which agrees with Major Rennell's Map. But here another doubt arises: In what manner were the longitudes and the difference of longitude settled? If by calculation from a measurement or estimation of distances, and an assumed length of a degree, (which is very probable,) then to ascertain Ptolemy's estimation of the distance upon the parallel of  $24^{\circ}$  of latitude would produce the difference of longitude, according to Ptolemy's length of a degree. Now, according to Ptolemy's standard of 500 stadia to one degree of a great circle, the length of a degree upon the parallel  $24^{\circ}$  should be no more than 456.753 stadia, or nearly 50.753 English miles, and decimals of a mile; and according to this reckoning, a distance of 160.718 English miles upon the parallel of  $24^{\circ}$  would produce a difference of longitude  $3^{\circ} 10'$ , and a distance of 131.341 English miles would give a difference of longitude of  $2^{\circ} 40'$ . Bishop Horsley.

haps, the only one that is built upon measurement; for if the coast is capable of a survey, it is almost to be depended upon as a certainty that it was measured by Alexander's surveyors.

The measurement of the sides is as difficult to obtain as that of the base of this triangle; nor does any thing appear like authority on this head, except what is found in Major Rennell, that it is an hundred and twenty-five miles by the course of the river from Laribundar to Tatta, and Laribundar is from fifteen to eighteen miles distant from the sea; this, with four miles from Tatta to the head of the Delta, makes upwards of an hundred and forty-four miles for the western branch of the Lower Delta, and is reduced to sixty-eight geographical miles by the scale<sup>259</sup>. The eastern branch by the course of the river is stated in the same author at an hundred and seventy miles. This is the best information attainable on the subject; for, as the authority of other maps is unknown, they are less to be depended on.

But there is another extraordinary source of obscurity which belongs to no other spot upon earth; for as the English charts give Lari-bundar for the extreme point west, and by a peculiar inversion Bundar-Lari for the extreme point east, so does the Ayeen Akbari give Cutch for the country eastward, on the bay of Cutch<sup>260</sup> or Scindy, and another Cutch<sup>261</sup> for Mekran on the west. Mr. d'Anville looked likewise for the Sangada of Arrian somewhere on the coast, but could find only the Sangarians or Sanganians, a horde of pirates in the bay of Cutch eastward,

<sup>259</sup> Curtius says, four hundred stadia, and then three days sail added. Lib. ix. p. 9.

<sup>260</sup> De la Rochette writes it Kartsch.

<sup>261</sup> If Cutch or Couche signifies a chain of mountains, this is readily to be understood.

whereas Sangada is evidently to the west of the Indus. May not this suggest an idea that Sangada was anciently applicable to both sides of the river, as Cutch is at present; and that the name has survived on the east, while it has perished on the west? In regard to the name of Cutch, Major Rennell is probably not mistaken, when he conjectures that Cedge<sup>262</sup> or Gedge may be the native root of Gedrôsia, the Cutch or Gedge-Mekran of the moderns.

It has been already observed, that Alexander had conceived a plan of that commerce which was afterwards carried on from Alexandria to the Indian ocean. I think this capable of demonstration by his conduct after his arrival at Páttala, and I shall enumerate some circumstances in confirmation of this assumption.

Alexander, in his passage down the Indus, had evidently marked it as the eastern frontier of his empire. He had built three cities, and fortified two others on this line; and he was now preparing for the establishment of Páttala at the head of the Delta, and planning two other posts at the eastern and western mouths of the river. The forces to be left under Python, who was satrap of this country, were chiefly Asiatic; sufficient, probably, for the defence of this frontier, if Alexander had lived to give vigour and stability to his empire, and capable of maintaining the posts he had established for the protection and extension of that commerce he had in view.

With these objects before him, he had, immediately upon his arrival at Páttala, dispatched his light troops in pursuit of the

<sup>262</sup> Kedge in Persian is crooked, difficult to be passed, and thence a bad road. Mr. H. Jones.

I have somewhere read that Kutch is equivalent to *coast*; and somewhere, that it signifies a chain of mountains.



fugitives who had deserted the city ; and most of them, upon promise of safety and protection, returned. His next care was to explore the deserts on both <sup>263</sup> sides, to find water and to sink wells. This is one evidence rather of a commercial than military tendency, for such, all who have travelled in the deserts will esteem it, and such was the opinion of Arrian, who adds, that it was with a view to render the country habitable.

The construction of a fortress at Páttala was committed to Hephéstion ; and as soon as that business was in some degree of forwardness, Alexander prepared to explore the western branch of the river to its mouth. The general course of this navigation is no difficult matter to conceive ; but the particulars afford doubts, which, from the deficiency of materials, and the variations in those we have, are not easy to be resolved. If we place Páttala near the head of the Delta, which we must, the site of Braminabad now in ruins, within four miles of Tatta, will sufficiently correspond. This city, before the inroads of the Mahometans and Mogols, is said to have been surrounded with a wall that had fourteen hundred bastions ; and the wealth and importance of such a capital, while commerce flourished on the Indus, plainly indicate <sup>264</sup> the judgment of Alexander in choosing it as a position for a fortress. If his departure was from this point, his progress was down the Lari-bundar river, or Darraway ; and the mention of two islands, one near the mouth and the other out at sea, will afford reason to suppose that the first is that upon which Lari-bundar <sup>265</sup> stands in our

<sup>263</sup> More probably on the west only.

<sup>265</sup> Major Rennell's last map places Lari-

<sup>264</sup> It indicates, likewise, the population of bundar on the west of the Darraway, or rather ancient India, as superior to the modern ; a Pitty branch.  
point so often insisted on in this work.

best charts. This, however, is not clear; for Captain Hamilton, who describes Lari-bundar as a village<sup>265</sup> of an hundred houses with a fort, and who himself conducted<sup>267</sup> a caravan from hence to Tatta, does not inform us on which side the river it is placed. From the course of his march we should suppose it to be on the western side, as Rennell<sup>268</sup> has described it; otherwise he must have crossed the river, which is not noticed. There is, however, one circumstance to make us think his route lay within the Delta, for he mentions the tombs<sup>269</sup> of the ancient kings evidently at Braminabad, four miles from Tatta, as if they lay in his road; if so, Lari-bundar is not on the west of the Indus.

Mr. Dalrymple<sup>270</sup> is satisfied in regard to the position of Lari-bundar on the eastern bank, but thinks its insular situation dubious; neither would it have been necessary to insist on this point, unless from a desire of fixing one of those islands observed by Alexander in his passage to the sea. He set out from Páttala with all his galleys, several of his half-decked vessels, and his best sailing transports; dispatching Leonnátus at the same time at the head of a thousand horse and eight thousand infantry, with orders to proceed within the Delta<sup>271</sup>, and attend the motions of the fleet. It had been found impossible to procure a native pilot, as the inhabitants had fled, and upon the

<sup>265</sup> In 1699.

<sup>267</sup> Vol. i. p. 114.

<sup>268</sup> I conclude this from Major Rennell's map, which places Dungham, an intermediate station of Hamilton's, on the west of the Daraway.

<sup>269</sup> Anquetil du Perron mentions these tombs as still existing, and testified to him by letter

from Mr. Erskine, English resident at Tatta in 1760.

<sup>270</sup> Private correspondence, December 22, 1794.

<sup>271</sup> This is a confirmation that the Delta in this part was not intersected with rivers or canals, and countenances the opinion I have formed of Hamilton's march.

second day a storm arose, which blowing contrary<sup>272</sup> to the stream, endangered the safety of the fleet. Some of the gallies perished, and the remainder was with difficulty saved by running them on shore. During the delay occasioned by this misfortune, and the repair<sup>273</sup> of the vessels, some light troops were sent in pursuit of the natives, and a few were taken who were used as pilots in the prosecution of the voyage. When these difficulties were surmounted, the fleet proceeded; and as it now approached the sea, the stream appeared enlarged to two hundred stadia<sup>274</sup>; an exaggeration which no computation of the stadium, no allowance for the overflowing of the river, can justify. It is true that the season<sup>275</sup> might have swelled the waters nearly to the highest, and the monsoon contributed to the obstruction of their discharge; but that a river, which is not more than a mile or a mile and a half broad, should from either of these causes be spread to the extent of twelve or thirteen miles<sup>276</sup>, is not consistent with probability. The numbers in Arrian are possibly erroneous, (for all numbers in a Greek text are to be suspected); but if they are correct, and copied from the journals Arrian followed, we must either make great allowance for the different<sup>277</sup> breadth of the river in that age, or suppose (as is much more probable) that the Mace-

<sup>272</sup> As this was nearly the month of August, the south-west monsoon was in its full vigour.

<sup>273</sup> Arrian adds, "ἑτέρας δὲ συνεκρήνυστο, others were constructed. But perhaps we ought to read, αἱ ἑτέρας, the others were repaired, if συνεκρήνυστο will bear that sense; for time would scarcely allow the building of new ships, and the country affords no timber.

<sup>274</sup> Arrian.

<sup>275</sup> July or August.

<sup>276</sup> By the lowest stadium.

<sup>277</sup> The Indus, like all the other streams subject to the solstitial swell, accumulates obstructions at its mouth. In the records of modern history, the sands are much increased, and Tavernier speaks of the mouths as hardly navigable; and such is the Rosetta, or grand branch of the Nile at this day.

donians on board were so alarmed at the catastrophe which befel them the following day, that they amplified in proportion to their terror.

That day produced a violent gale from the sea, and great hazard to the fleet, which had evidently moved with the tide of ebb, and been involved in the turbulence raised by the opposition of the wind to the stream. To avoid this, they took shelter, by the advice of their native pilots, in one of the canals<sup>278</sup> or creeks which had been formed for the convenience of the neighbouring country. As the tide fell, the vessels were left on ground; but upon the return of the flood, those only that had settled upright in the mud, or ooze, escaped unhurt, while all that lay inclined upon the harder<sup>279</sup> ground were exposed to the most imminent danger, and several were lost.

The surprise of the Macedonians on this occasion, and their ignorance of the tides, have been ridiculed by Voltaire, who thinks it incredible that Alexander should not know the nature of tides, as he must have seen the Eurípus when in Bèotia, and must have known that Aristotle wrote upon the subject. Major Rennell has corrected this petulance, by shewing that the tide in the Indus is the Bore<sup>280</sup>, which operates along the whole coast, and which in the neighbouring bay of Cutch, and

<sup>278</sup> Διάφυκα, a nullah.

<sup>279</sup> The gallies (γαλιέροι) were probably, in the nautical phrase, *sharp built*, that is, with deep keels; a vessel of this kind is ill adapted for *taking the ground*, and when she is left upon an hard surface lies down almost on her side; the consequence is, that upon the return of the tide, she fills with water before she floats. I am informed that the circumstance here noticed is exactly similar to what takes place in the mouth of the Seine, between Havre and

Rouen, where the tide rises with a rapidity greater than any experienced in our own country, except perhaps in the Severn.

<sup>280</sup> The Bore, with all its attributes, is described by the author of the *Periplus Maris Erythræi* (page 27, Huds. Ed.) in the gulph of Cambay, or Guzerat. The Bore in the Hoogly river runs 70 miles in four hours; rises at Calcutta five feet in an instant, in the Megna 12 feet. Ren. Ap. 358.

round the whole peninsula of Guzerat, is described as one of the most alarming effects which the sea produces.

The damage was repaired as well as the situation of affairs would allow ; and two of the transports were sent down to explore an island called Killuta [Killoota], where it was said anchorage and shelter would be found, and occasion might be taken for prosecuting the discovery<sup>21</sup>. Upon a favourable report the fleet proceeded to this station ; and Alexander, taking with him some of the best sailing vessels, proceeded to a second island which lay clear out of the river, and ascertained the existence of a passage. The distance of this second island from Killoota is estimated at two hundred stadia, or about twelve miles ; and if our modern maps or charts were to be depended on, we could find positions for both these islands. One of Mr. Dalrymple's charts gives an island named Lari-bundar (from the town), which would answer to Killoota, and another small islet which might correspond with the second ; Mr. de la Rochette's map seems to have followed this as authority ; but as Mr. Dalrymple publishes the drawings he receives, without making himself answerable for their accuracy, and as he has himself doubts concerning Lari-bundar, nothing can be determined positively on the subject. From the nature of the river, we may conceive that new accumulations have obscured the ancient face of the coast, new channels may have been formed by art or nature, and old ones obstructed ; and if we were to give a preference, it would be to question the position of Killoota<sup>22</sup>.

<sup>21</sup> More will be said on the subject of this island when it comes under consideration again upon the departure of Nearchus.

<sup>22</sup> Cillúta, Sillúta Scillustis Psiltucin. Curt. Loccenius, *in loco* ; but see *infra*. Otter men-

tions Deboul, Div-il Scindi, here, in latitude 22' 30", which it certainly is not ; and Lahuri, Larri on the eastern branch, two days journey distant, which is vague. Vol. i. p. 406.

here assumed, and establish upon future observation the site of the outer islet, as the extent of Alexander's progress.

The Western Mouth of the Indus called SAGAPA by Ptolemy :

Longitude			} Latitude
From Ferro, - -	110	20 0	
Remell, from Greenwich,	66	22 0	
add from Ferro, - -	17	40 0	
	84	2 0	
Ptolemy corrected by Gossellin,	78	5 0	

From this point he returned back to Killoota, and sacrificed to the gods ; he proceeded the next day a second time to the outer island, and sacrificed there also ; after which, he stretched out into the ocean, as he asserts<sup>243</sup> himself, to determine whether the sea were open, or there were land in the neighbourhood ; but, as I imagine, says Arrian, not a little instigated by the vanity of having it recorded, that he had navigated the Indian<sup>244</sup> ocean. At the extent of his course, he sacrificed a third time to Neptune with still greater solemnity, throwing the golden vessels he had used in the ceremony into the sea, and praying for a prosperous issue to the expedition of Nearchus.

The object of this excursion being completed, Alexander returned<sup>245</sup>, with the vessels which had accompanied him, up the

<sup>243</sup> Probably in his letters, which were extant in the time of Arrian.

<sup>244</sup> Τῇ Ἰνδῷ θάλασσᾳ. In opposition to the Mediterranean.

<sup>245</sup> To Hy'ala, says Diodorus, a city with

a Spartan government ! But where are we to find it ? Both Diodorus and Curtius are ignorant of the voyage down the eastern branch. Diod. xvii. p. 241.

river again to Páttala, where he found the citadel completed, and Python returned from his expedition. Hephéstion was left to superintend the construction of a naval arsenal here, with orders to fortify it, and prepare it for the reception of a fleet which was to be established at this station, while Alexander himself should undertake another excursion to the sea by the eastern branch of the river.

These two branches only are mentioned by Arrian, and the reason evidently is, that these were the only two explored by the Macedonians. I have met with no author prior to Ptolemy who mentions the seven<sup>286</sup> mouths; and modern geography, though it preserves the record of the river still having seven issues, affords nothing specific upon the subject. On two of Mr. Dalrymple's charts, double the number of creeks or inlets may be collected, with their names; but whether they are natural or artificial, ancient or modern, seems, from all the information we have at present, impossible to determine.

Major Rennell brings out the eastern channel much farther towards the east in his second map than in his first; the channel itself, or the place at which it issues, is named Pandrimmeè or Pandrummeè, in his and several of Mr. Dalrymple's charts; and the stream is called Nulla Sunkra. But Nulla, Nalla, Nala, Nallah, is a Persian term, and seems as if it were generally applied to an artificial<sup>287</sup> cut. The authority for making

<sup>286</sup> The author of the *Periplus* says there are seven mouths, but two only navigable; the others are shallow, or choked by the marshes they pass through.

<sup>287</sup> Nallah or Nallah is a Persian word, derived from the Hebrew נַחַל and נָחַל, Hal and

Nahal, a hollow, valley, or course of a torrent—the torrent itself. Lev. xi. 9. Deut. ii. 24. Isaiah, xxx. 28. xxxv. 6. xxxiv. 9. But there is an authority, Isaiah, xi. 15. where נְהַלִּים, Nahalim, is applied to the seven streams of the Nile. Bishop Horsley.

this the easternmost branch at present stands high ; for we have in Frazer the translation of the actual treaty<sup>288</sup> between Nadir Shah and the Mogol Emperor, in which Nala Sunkra is made the new boundary of the two empires. It is not a little remarkable, that previous to this treaty in 1739 the boundary of Indostan and Persia was nearly the same as in the age of Alexander ; for till this took place, the Mogul empire extended to the range of mountains on the west of the Indus, the residence of the Belootches, and in Arrian's journal the river Arbis or Arabis, which springs from that chain and runs parallel with it at no great distance, was the limit of India and of Indian manners<sup>289</sup>.

Nadir Shah had passed the sources of the Indus and the Panje-ab, and he preferred the Attock river as a boundary to any other ; he prescribed this, therefore, to the conquered Mahomed, and at the same time carried his claim to the cirar of Tatta and its dependencies, including the whole Delta, as bounded by the easternmost branch, or Nala Sunkra, and establishing<sup>290</sup> Lohry-Bundar (evidently beyond that line) as the extent of the Mogul empire.

There is nothing but the term Nala which hinders me from establishing this as the very channel navigated by Alexander ; and though no modern accounts have ever been attainable to

<sup>288</sup> Frazer's Nadir Shah, p. 226.

† Otter, who reports this treaty nearly in the same manner as Frazer, writes it Nalé Sengueré.

<sup>289</sup> The Oritæ partook of Indian manners, but were not Indians.

Something similar to this occurs in the treaty of Seleucus and Sandracottus. Strab. lib. xv. p. 724.

<sup>290</sup> Written Seuheri by Otter, vol. i.

p. 409, perhaps for Leuheri. Lohry, for so it is written in the treaty, may be referred to what our English authorities call Bundar Laree, to distinguish it from Lari-bundar on the western branch, or Daraway. The true reconciliation of this seems to be, that both Lari-bundar and Bundar-Lari have their name as ports or Bundars to Loheri, in or near the island of Behker.



ascertain the passage down this branch, yet I have no doubt that while commerce flourished on the Indus this was the immediate course of communication, as trade always flowed to Guzerat and the coast of Malabar naturally, rather than to any port on the west of the Indus. If the present Nala be a genuine stream, there is no difficulty in adopting it; if it is an old channel cleansed, it might assume the name of Nala; and if it is a new cut, it cannot be of very late date; for the commerce on the Indus is ruined. In any view, it must be nearly parallel with the ancient channel, and at least part of the course pursued by the Macedonians. Alexander himself assumed the office of exploring this passage; and no commander was ever more personally entitled to the honour accruing from the success of his designs, or contributed more by his own exertions to the accomplishment of them: In battle he constantly fought at the head of that body on which the fortune of the day depended; in all expeditions <sup>22</sup> he personally executed that part which presented the greatest difficulties; and in every scheme of magnitude, after procuring the best information, he was the first to try the ground himself, before he committed <sup>23</sup> the execution of it to others.

It was in conformity to these principles of conduct that he now determined to explore the eastern branch of the Indus; conquest was at an end, for the barrier of the empire was determined on; and evidently no object was before him, but either the safety of the fleet in the choice of a passage, or that still greater system of commerce which he had meditated, to

<sup>22</sup> He sent Cráterus through the midland provinces, and marched himself through Gadrósia.

<sup>23</sup> He visited the stagnant pools from the inundation of the Tigris and Euphrates, and planned the barrier at Pallácopas.

connect the interests of Europe and India, and of which the success of Nearchus was to be the origin and commencement.

He departed from Páttala apparently with the same escort as before, and fell down the stream till he arrived at a lake or bay, which was of great extent, and received its supplies from other waters in the adjacent tract. But as we know the Indus receives no tributary streams after it passes Behker, we must conclude that these waters in the neighbourhood can be no other than different channels, which branch from the main river and intersect the Delta in different directions; thus is Arrian, who mentions but two channels, compelled to bear witness to the existence of more. And would not this be the case with the Macedonians themselves? They navigated only two streams, and therefore described but two; they have nevertheless recorded the circumstances which occurred, and these circumstances prove more to us than to those concerned in the transaction.

This lake<sup>33</sup> is evidently no more than a bay into which the eastern channel falls, and must be searched for in vain at the distance of twenty centuries, considering the nature of the river, and the accumulations at its mouth. It is described by Arrian as very extensive, and abounding in all the species of fish which are common to the neighbouring sea. At the head of this bay Leonnátus and the greater part of the forces were put on shore, while Alexander proceeded with the gallies to take a

<sup>33</sup> Q. Curtius, who knows nothing of the passage down this branch, finds a lake on the other, where those who bathed became le-  
prous, but were cured with oil. Lib. ix. p. 9.

view of the ocean. He observed the passage here more open and convenient than that through the western branch; and though he did not afterwards send the fleet down this channel, we may collect that he intended to use it as the means of communication with the coast of Guzerat and Malabar, by the transactions which took place; for as soon as he had anchored he landed with a body of horse, and proceeded three <sup>294</sup> days march along the coast, making observations on the country, and directing wells to be sunk.

The general title of this tract is Cutch <sup>295</sup>, and gives name to a bay on which it lies; the country is a desert inland, and seldom passed but by the caravans which used to travel between Guzerat and the Indus <sup>296</sup>. Our modern journals still mark the wells which have been sunk to make the desert passable. Parallel to the coast runs a range of mountains called Chigoo; and the strip of land between these and the sea is the residence of the Sanganiens <sup>297</sup>, a race infamous for their piracies in the accounts of all our early voyagers. Along this level Alexander advanced, and the wells he sunk sufficiently indicate the object of his expedition.

If I understand Arrian right, Mr. Rennell <sup>298</sup> is mistaken when he supposes Alexander to have advanced westward along the Delta upon his landing in the direction that his fleet was to sail, for the fleet did not put to sea by this channel; and mention is afterwards made of a detachment that appears to have landed

<sup>294</sup> Probably fifty or sixty miles.

<sup>295</sup> Kartsch. De la Rochette.

<sup>296</sup> So Ayeen Akbari, vol. ii. p. 71, 8vo. ed. which *seems* to add that the Paddar river of our maps is only an inundation of the sea,

previous to the rains. See Purchas. vol. i. p. 236, where it is called a fair river.

<sup>297</sup> Hamilton had a battle with them.

<sup>298</sup> Postscript, p. 294.

on the Delta, with orders to examine the coast, to sink wells<sup>299</sup>, and then join the main army at Pattala<sup>300</sup>.

Upon the conclusion of this excursion, Alexander embarked his horse again, and returned to the head of the bay where he had left Leonnátus. Here he directed a station<sup>301</sup> to be fixed, with a naval yard and dock, leaving a sufficient garrison for its protection, and provision for four months.

I enter into this detail of minute facts, in order to evince the reality of that foresight and prudence which I have all along attributed to this great commander; his character has been usually estimated by the victories he gained and the ravages he spread; but the regulation of his empire, the security of his frontier, the extent of his commercial views, the survey of his provinces, and the share he took himself in every thing that concerned his government, lie obscured by the splendour of his arms and the extent of his conquests. We are now to attend him back again to Páttala; and if I could give a satisfactory account of this eastern branch, I should gratify the curiosity of the most accurate inquirer: but Major Rennell, who says it is an hundred and seventy miles in extent, does not carry the Nulla Sunkra to 'Tatta, but much higher. Mr. de la Rochette's<sup>302</sup> map gives it a direction I could adopt, and makes a considerable bay at the mouth of it; but as I know not the authorities he follows, I am constrained to hesitate while I seek for evidence. The lower part of the Delta is intersected by a variety of channels which it is impossible to specify; it is with-

<sup>299</sup> See Gronovius's Note, p. 259.

Lib. vi. p. 23.

<sup>300</sup> Τῇ Παραλίαν.

<sup>302</sup> As does d'Anville Antiq. Geog.

<sup>301</sup> Possibly the Xylenopolis of Pliny,

out wood, and abounds in camels; the upper part near Tatta was fertile in the best rice, and other produce of importance, while the country had any commerce; and cultivation being probably in a higher state at the time the Macedonians visited the country, the support of three garrisons for its protection was neither superfluous or oppressive.

Alexander did not stay long at Páttala after his return; he had previously determined to penetrate into Gadrôsia, and explore the coast, in order to facilitate the success of Nearchus; and from the circumstances which occurred, we may collect that he moved near a month earlier than the fleet. Strabo mentions that he was ten months in his passage from Nicêa to Páttala; if, therefore, he had set out on the twenty-third of October in the year three hundred and twenty-seven A. C., he came to Páttala in August three hundred and twenty-six; but the dates in the same author prove rather nine months than ten; and the concurrent testimony of other facts favours this estimate rather than the other. We cannot allow much less than a month for the transactions which took place at Páttala, including the navigation of the two streams; if, therefore, he left that place at least a month before Nearchus, as will presently appear, he must have arrived there in the latter<sup>303</sup> end of July or the beginning of August, and left it early in September.

<sup>303</sup> Strabo, Lib. xv. p. 691.

They set out a few days before the setting of the pleiades, and spent the autumn of that year, the winter, spring, and part of the following summer, in their passage down the river; they arrived at Páttala about the rising of the dog-star, completing their navigation

in ten months—but how so?—the pleiades set the 28th of October, and the dog-star rises the 26th of July, which makes nine months as nearly as is requisite. How can we account for *δέκα μῆνας* here, but by that perpetual error which pervades all the numerals in Greek authors?

We shall be under no necessity of attending upon this expedition farther than it is connected with the progress of the fleet; but as there were two opportunities of communication embraced, and a third attempted, we must accompany the army into the country of the Arabítæ and Orítæ; after which, it will be sufficient to sketch the general course of the route into Karmania, where Nearchus joined Alexander again, and reported the account of his success.

I place the departure of the army from Pattala in the latter end of August, or the beginning of September, at which time Nearchus received his final orders, which directed him to take charge of the fleet, to prepare every thing necessary for the voyage, and to proceed to sea as soon as the season would permit.

Alexander proceeded into the country of the Arabítæ, lying evidently in that range of mountains before described, which commences from the sea and extends parallel with the Indus up to Kandahar. These mountains are still occupied by different tribes of the Belootches, whose habits to this day resemble the manners of the people described by the Macedonians. They dispersed at the approach of a superior force, and collected again from their fastnesses as soon as the enemy was passed.

These Arabítæ are mentioned by Arrian as an independent tribe, like the Belootches<sup>304</sup> of the present day; as in fact all the inhabitants of mountains<sup>305</sup> either in Persia or Hindostan have generally been. Their country seems to lie on one of the

<sup>304</sup> Ebn Haukal, p. 140, who calls them robbers inhabiting one part of Asia, *i.e.* Taurus, Bolouges, compares them to Arabs; and Amanus, M. Casius, &c. &c. may find a very Kefes, the inhabitants of the mountains, are extraordinary one in Mr. Baldwin's journal, called Kouje in Persi; hence Kouje or Cutch? published with Major Capper's route from Basra to Aleppo.

<sup>305</sup> Those who wish to see a catalogue of the

branches of the great chain, and extends into the plain as far as the river A'rabis, which was the limit of India in the age we are treating of, and either at this river or at the mountains, the boundary continued, till Nadir Shah, by his treaty with the Mogul emperor, removed it to the eastern stream of the Indus. Major Rennell's second map defines this country and the ridge which ends at Cape Monze, agreeably to Arrian's account, and, from a variety of corresponding circumstances, there is every reason to subscribe to his opinion.

And here, as I shall have no better opportunity to mention a variety of facts, which will contribute to the perspicuity of the narrative, I shall introduce a general view of the coast, and the peculiarities connected with it. The nature of the two coasts of Malabar and Coromandel is now well known in Europe, as consisting of a tract of low land towards the sea, below a line of mountains which enclose the whole centre of the peninsula; the same circumstance seems to take place again on the bay of Cutch, where the Chigoo mountains appear running inland, parallel with the sea, till they join the range of sand hills which form the eastern branch of the valley in which the Indus flows; the centre of this valley is occupied by the stream, and at no great distance on the western side, another barrier is raised by the chain of black and rocky mountains so often mentioned; one ridge of which terminates not far from the western mouth of the Indus at Cape Monze; the Eirus of the Macedonians. Out of this chain, at no great distance from the sea, a branch shoots off again, running west or north-west parallel with the coast<sup>306</sup>, and inclosing the level country of Gadrôsia, parched

<sup>306</sup> It is nearly evident that a second ridge of the Orîtz. shoots from this chain, forming the residence Q. Curtius says, that Alexander waited at

and barren in the extreme. The modern name of this tract is Mekran, or Cutch<sup>307</sup> Mekran, and is specified in Commodore Robinson's journal, published by Lieutenant Porter by the name of Bloachee, and Brodia. Bloachee is a corruption of Belotchee, and I imagine the coast is so called as far as the influence of the Belootches<sup>308</sup> extends, and, where that ends, Brodia. That this branch sends off shoots towards the sea at particular points seems probable; but that its general course is parallel with the coast, is ascertained by Commodore Robinson's<sup>309</sup> journal, and another of the Houghton East Indiaman, 1755, which I owe to the communication of Mr. Dalrymple. In all this level country no river<sup>310</sup> has a longer course than from the mountains to the sea; in which it resembles the coast of Malabar, where almost all the rivers rise westward<sup>311</sup> of the Ghauts. One branch of this range, I imagine, verges towards the sea, not far eastward of Cape Jask, separating Gadrôsia from Karmania; but no sooner are we past that promontory than we

Páttala for the return of spring; not knowing that the change of the winds causes the difference of seasons. He adds, lib. ix. p. 10. that Alexander made nine days' march into the country of the Arabites, and nine more into Gadrôsia; subjoining, almost immediately, five days' march to the river A'rabis. I could have made use of his eighteen days, if he had not destroyed his own consistency.

<sup>307</sup> Gedje-Mekran; Rennell.

Kouje. Sir William Ouseley. Ebn Haukal, p. 143. Bayer, 29. Blootsch. Ouseley in Ebn Haukal. Bolouche. Kouches and Bolouches have a different language from Kirman. Ebn Haukal, *ibid*.

Kouje in Ebn Haukal seems to signify Hills, perhaps from Koo? hence Kouje Mekran is the high land extending from the Indus towards Karmania; and Kouje, or Cutch

simply, the Chigoo hills stretching east towards Guzerat.

<sup>308</sup> The boundary between Bloachee and Brodia is fixed by Lieutenant Porter at Guadel; p. 5.

<sup>309</sup> "The land, as in all other parts of the coast [of Bloachee], is extremely low by the sea side, and very high in the country." C. Robinson. Lieutenant Porter, p. 2.

<sup>310</sup> Mr. de la Rochette marks the Tanka-Banca as rising beyond the mountains; but, as no memoir accompanies his map, I know not on what authority. Otter, however, countenances this opinion.

<sup>311</sup> It is not so on the coast of Coromandel, the Nerbudda, Kristna, Ganga, and Caveri, &c. all rise above the Ghauts, and near the western range.



find the same face of the country return, a level tract along the coast called the Kermesir, or hot country, with a range of mountains inland. This range, Mr. d'Anville says, is never cut by any river, but stretches on uninterrupted till it joins the mountains which encircle Persis and Susiana. Here the Tigris stops its farther progress, and sends it off with various curvatures till it joins the mountains of Armenia. These general properties attending the whole range of coast almost from the mouths of the Ganges to the Tigris, present one of the boldest features in the geography of the world, and become of more importance, as these mountains connect with that extraordinary chain which extends on the north of Persia across the sources of the Indus, forms the barrier of Hindostan, and penetrates through the extremity of Asia, till it falls into the sea of Amoor, on the north of China.

There is no part of Arrian's history where these general circumstances connect with the transactions of the Macedonians, which is unworthy of the attention of geographers; and, on the particular coast of which we are now to treat, nothing which the most accurate investigation of modern inquirers has not confirmed. He has traced the line of these mountains, from Paropámisus to the sea, with as much precision as the Ayeen Akhari; and he has brought the army to that pass over them, which continues to this day the route of intercourse between the Indus<sup>33</sup> and Mekran; if intercourse there can be, where the roads are exposed to banditti, and where there is little power or attention in government to protect the interests of commerce.

<sup>33</sup> See the Nubian Geographer, p. 57, et seq.

Arrian does not indeed expressly state, that Alexander passed a line<sup>33</sup> of mountains in this march; but it may be collected from what he has said above, that the range in the country of Musikánuš, or Sambus, extended to the sea. He advanced with a body of horse and light troops, leaving the remainder to follow under the command of Hephêstion; the natives fled into the desert on his approach; in pursuit of them he passed the A'rabis<sup>34</sup>, a narrow stream with little water, and advancing through the desert all night, reached the habitable country in the morning. This was the residence of the Orítæ. Here he left his infantry to follow in due order; and, spreading his cavalry over the country, slew all that resisted, and brought in a great number of prisoners. The army then halted at a small<sup>35</sup> stream for the arrival of their light infantry and the junction of Hephêstion. As soon as they came up, Alexander himself moved to Rhambacia<sup>36</sup>, the principal village of the

<sup>33</sup> The existence of this range is indisputable, for the Ayeen Akbari says, "there is another range, one extremity of which is in Kutch, (the coast west of the Indus,) and the other joins to the territory of the Kulmanies, where it is called Karch. It is inhabited by four thousand Belootches." Vol. ii. p. 143.

It has already been shewn that the Kulmanies are on the parallel of Sewistan, and probably occupy the territory of Sambus; this range, therefore, that runs from thence to Kutch, (the coast,) can be no other than the one occupied by the Arabítæ or Orítæ. I am persuaded with Major Rennell, that there are two of these ranges, one belonging to each; and that they form the natural division of the provinces inhabited by the respective tribes.

"The land at the back of Crotchy is pretty

"high, and extends so to C. Monze." Lieutenant Porter, p. 2. I shall shew hereafter that Crotchy is the Crocala of Arrian; and C. Monze, Eirus, or Irus: and I consider this evidence of Porter as full proof of the existence of a chain previous to the river A'rabis.

<sup>34</sup> See *supra*, the Hend of d'Anville and de la Rochette, and the Arabítæ; perhaps the Hendians of the Ayeen Akbari.

<sup>35</sup> Probably the stream we shall hear of again under the name of Tomêrus.

<sup>36</sup> Ram, or Rham, has doubtless a sense in Sanskreet. There is a Ram Raja in the Mahratta country; another Ram mentioned in Nadir's treaty; and Ram-nagar, Ram-Gur, in the Ayeen Akbari, as lying in the course of the mountains north of Gadrôsia. I see no reason why this last may not be Rham-bacia;

Orítæ; he found the situation advantageous, and directed Hephéstion to fortify it as a post, while he proceeded again to the confines of Gadrósia. Here the Orítæ who had fled, after being joined by the Gadrósians, had taken post in a pass that was narrow and difficult of access (apparently on the second of those<sup>37</sup> chains already mentioned); and this pass they determined to defend. Upon his approach however they dispersed, and the Orítæ sent offers of submission. He ordered the chiefs to collect the fugitives, and send them to their respective habitations, under a promise of safety and protection.

Apollóphanes was appointed satrap of the province, and Leonnátus was left with the Agrians, a body of archers, horse and infantry, and the whole of the Greek cavalry in the service. These forces were intended to support the regulation of the province, to superintend the establishment of the city, and to wait the arrival of the fleet on the coast. Alexander<sup>38</sup>, upon leaving Páttala, had designed to have proceeded along the

but I find no Ramnagar in the maps. See Snakenborck Not. ad Curt. lib. ix. p. 10.

<sup>37</sup> I have before appealed to [C. Robinson] Lieutenant Porter, for the existence of a range which falls in at C. Monze, or Irus; and I think we have his authority for a second ridge between the Orítæ and Gadrósia, which falls in at Cape Moran, or the rocks of Kingalah. Moran, I have no doubt, is the Malana of Arrian, which he says is the western limit of the Orítæ; and a bluff head-land, mentioned here by Lieutenant Porter, is, I apprehend, the termination of the ridge. Moran is marked by d'Anville with the title of Malan; and considering how easily / passes into r, both to the ear and by pronunciation, no doubt remains that the Malana of Arrian, the Malan of d'Anville, and the Moran of Porter, are the same. See Lieutenant Porter,

p. 3. I have met with Malan and Mahlan in other journals. M. d'Anville, p. 44, Antiq. Geog. quotes Thevenot; and Thevenot mentions Malan, p. 194, Eng. ed. but with such obscurity, (for he did not see it,) that it is not easy to ascertain whether he means to say it is twenty or forty leagues from Scindi.

"Cudjerah appears a low point, but terminates in a bluff, as by its last appearance with C. Moran." Lieutenant Porter, p. 3. "The land from Sommeany, [the mouth of the A'rabis,] runs extremely low next the sea, but the back is very cragged, and continues so to Cudjerah." Id. ibid. All these testimonies indicate a ridge tending to the sea at Málana; and here, where Arrian places the boundary of the Orítæ, we ought to find it.

<sup>38</sup> See Arrian, p. 260.

coast and attend to this service himself, by digging wells and collecting such supplies as the country afforded; but he had been diverted from this purpose by the flight of the Arabítæ and Orítæ; and as he was now at the entrance into Gadrôsia, where he foresaw the difficulties he was to encounter, he was desirous of proceeding with all dispatch, and left the protection of the country and the fleet to Leonnátus. That officer approved himself worthy of the charge; for scarce had Alexander left the province before the Orítæ, with the neighbouring tribes, collected again into a body<sup>319</sup> and attacked the forces left for its defence. A victory over such an enemy as this was perhaps no great achievement; but as Leonnátus slew six thousand natives, saved the province, and relieved the fleet, his services were rewarded with a crown of gold when he afterwards joined the main army in Susiana<sup>320</sup>. Neither ought we to undervalue the merit of this service; for this part of the coast, before we enter Gadrôsia, appears neither deficient of inhabitants or the means of supporting them. The natives, as possessors of a mountainous country, were probably hardy, and accustomed to a life of pillage, neither unacquainted with the use of arms, nor without courage to maintain their independence. They are described by Arrian as not being an Indian tribe, for India ends at the A'rabis; but as being the last people whom Alexander found with Indian manners. As soon as he entered Gadrôsia, he was properly in Persia; and the distress he experienced in that province shall be no farther noticed than as it is connected with the navigation of the fleet, to which we must now return.

<sup>319</sup> Eight thousand foot, five hundred horse, <sup>320</sup> He probably joined in Karmania, but Q. Curt. lib. ix. p. 10. The reverse is more received the crown in Susiana. credible, for these tribes are all mounted.



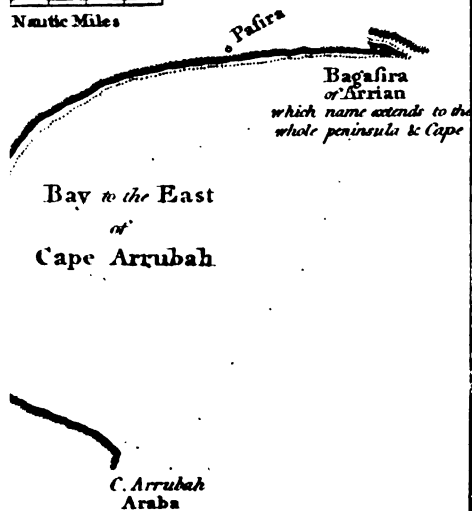




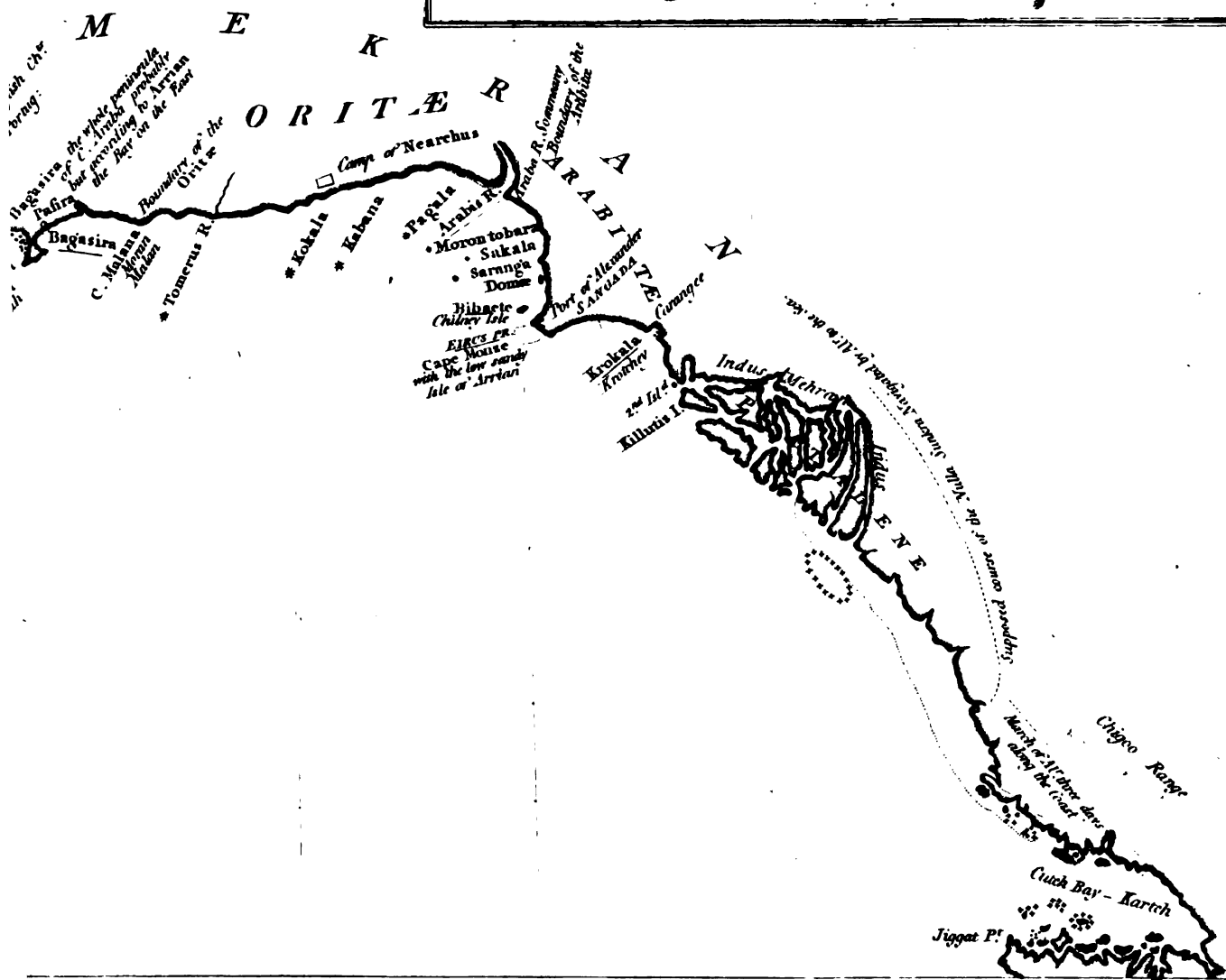
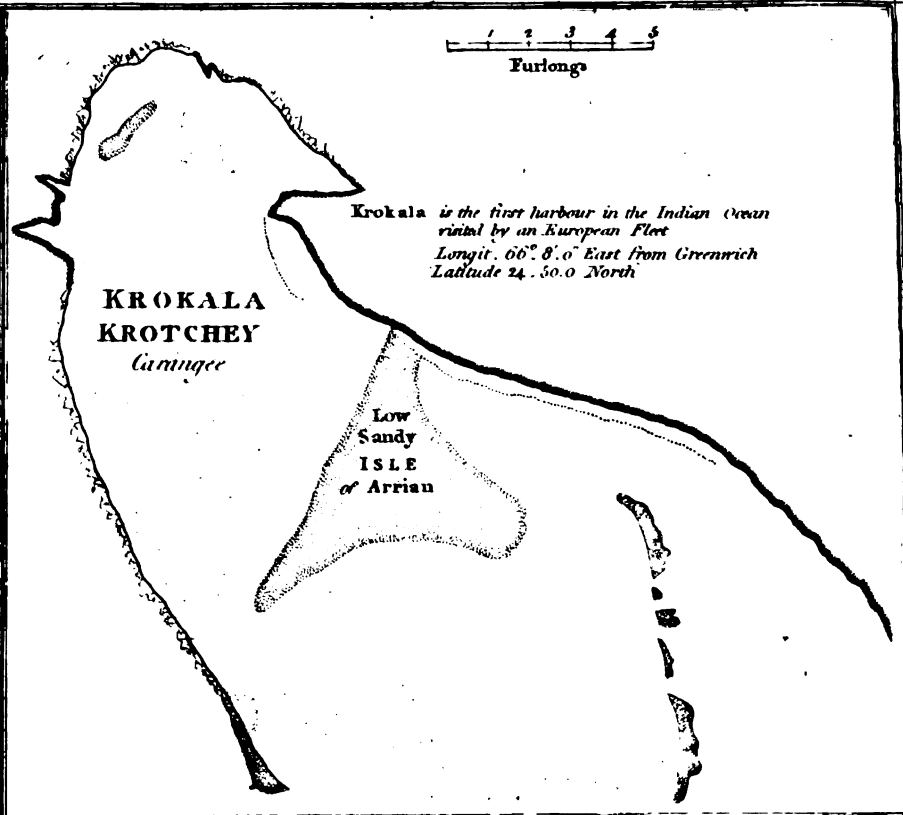




1 2 3 4 5  
Nautical Miles



1 2 3 4 5  
Furlongs



65°

THE  
V O Y A G E  
O F  
N E A R C H U S.

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B O O K III.

COURSE FROM THE INDUS TO CAPE JASK.

I. *Coast of the Arabies, or Arabiæ.*—II. *Coast of the Oritæ.*—III. *Coast of the Ichthyophagi.*—IV. *Dissertations.*

I HAVE already fixed the departure of the fleet from the Indus on the first of October, in the year three hundred and twenty-six A. C. and though I might have taken advantage of Strabo's authority to postpone this date to the tenth, I still prefer the precision of Arrian to the general date of the Geographer. The north-east monsoon, which commences in November and becomes settled in December, makes a later day more agreeable; but as we shall immediately see that Nearchus, after having cleared the river, was obliged to lie in harbour twenty-four days, till the season was favourable, and other circumstances of the voyage mark the commencement and vigour of

the monsoon, the method pursued to fix the date is not liable to objection.

The reason for proceeding before the monsoon commenced, is ascribed by Strabo to the discontent of the natives; and we may observe, that though Mêris, the chief of Páttala, had previously made his submission to Alexander, he fled on the approach of the fleet, and no mention is afterwards made of his return, or his being brought in by the troops who were sent in pursuit of him. His flight into the desert, we may conclude, was on the east of the Indus; for had it been on the west, we should have heard of some attempt to recover him, when the army proceeded in that direction; but as no such circumstance occurs, we must suppose that he returned as soon as he heard of Alexander's departure, and endeavoured to recover the province he had lost.

This transaction throws light upon the narrative of Arrian, and reconciles the difficulty arising from the departure of the expedition before the season. Arrian<sup>1</sup>, however, is so far from acknowledging it, that he mentions the performance of the games and sacrifices usually adopted on such occasions, which intimate neither haste or confusion at the actual moment of

<sup>1</sup> The passage in Strabo is too express to be omitted.

Καὶ δὴ καὶ Φησὶν ὁ Νέαρχος, ἤδη τῷ βασιλεῖς τελευτῶν τὴν ὁδὸν, αὐτὸς μετὰ πλείους κατὰ Πλευράδος ἐπιτολὴν ἰσπερίαν ἀρξασθαι τῷ πλῴ, μήπω μὲν τῶν πνευμάτων δικαίων ὄντων, τῶν δὲ βαρβαρῶν ἐπιχειρῶντων αὐτοῖς, καὶ ἐξελαινόεσσαν καθαρῶσαι γὰρ ἀπὸ τῆς βασιλείας, καὶ ἐλευθεριάσαι. Lib. xv. p. 721.

Nearchus says, that after Alexander was upon his march, he set sail himself on the

evening rising of the Pleiades, though the wind was not yet favourable. But the natives attacked them and drove them out, having resumed their courage on the departure of the king, and wishing to recover their independence.

If these circumstances were in the journal of Nearchus, which there is every reason to believe, Arrian cannot be justified in suppressing them.

embarkation. But there is one particular relating to the departure, which, if Arrian intentionally suppressed the flight of the Macedonians, seems to indicate the reality of it; for it appears, according to his own account, that the fleet did not take its departure from Pattala, but from a station near the mouth of the river. This station is doubtless the post Alexander had formed, and probably at Killoota<sup>2</sup>; for there, our author says, he had found water and good anchorage, with protection both from the tides and the monsoon. If I had sufficient data for fixing the Debil-Scindy of our modern maps near the mouth of the Laribundar river, I should have little hesitation in asserting its identity with Killoota, for Debil-Scindy is only a Persian or nautical corruption of *Dev*, or <sup>1</sup> Dive-il-Scindi, the island of the Scind, or Scindi.

The Dabil of Al Edrissi is placed three stations, that is, sixty or seventy miles, from the mouth of the river; but Diul is described by Purchas<sup>4</sup> as the residence of the governor, at about ten miles distance only from the Bar. If this were on the eastern side of the river, and insulated by a stream derived from the main channel, it would correspond sufficiently with the Killoota of Arrian, both in point of distance and position; and

<sup>2</sup> Ἰππάρκῃς ἀπὸ τοῦ Ναυράθμου.

<sup>1</sup> *Dive* is common to many Indian dialects. Selen-dive is Ceylon. Lack-dives, Mal-dives, Anje-dives, are all clusters of islands. Diu in Guzerat is another form of corruption. See d'Anville Eclair.; and Selen-dib, which we meet with in Oriental orthography, gives the change of *v* into *b*, in Dib-il-Scindy. *Il* is written *el*, *al*, or *ul*. We may therefore conclude that Debil and Diul are the same; and it is possible that the name may have passed from a place higher up the river to another

lower down, according to the change of government, or the convenience of the governor.

<sup>4</sup> The account in Purchas is from Walter Paxton, who in 1612 landed here with Sir Robert Shirley, ambassador to the king of Persia, who says, "we went on shore in one of the country boats about 8 o'clock in the morning, our ship riding four or five miles from the river's mouth, from whence we had fifteen miles to Diul." Purchas, vol. i. p. 496.

it is more than probable that this assumption may be verified by some of our countrymen who may have been at Tatta, or may visit it hereafter. D'Anville's<sup>5</sup> account of Deb-il-Scindi from Pimentel favours this conjecture.

But if Nearchus took his departure from a station<sup>6</sup> at this island, and not from Páttala, (as will immediately appear,) though it does not amount to proof that he was driven from thence by the natives, it affords great reason to suspect it, and to confirm the assertion of Strabo, who copied from the journal of Nearchus as well as Arrian.

Wherever we place this station, it was only an hundred and fifty stadia<sup>7</sup>, or little more than nine miles from the mouth of the river; for Arrian gives two distances, one within the bar and another from the bar to Krókala, each of an hundred and fifty stadia; and as the latter corresponds within a mile to the actual measure of the coast, we cannot without injustice suspect the former of inaccuracy.

Anno 326. When the fleet weighed from this station, the first day's course  
A.C. Oct. 1. down the river<sup>8</sup> was only six<sup>9</sup> miles, and they anchored at a  
Oct. 2, 3, 4.

<sup>5</sup> Antiq. de l'Inde, p. 38.

<sup>6</sup> This is the place intimated by Pliny as the Xylenópolis, from whence the voyage commenced. Unde ceperunt exordium. Lib. vi. c. 23. But the whole is dubious.

<sup>7</sup> I have before examined d'Anville's stadium of fifty-one French toises, and shewn its general conformity upon the whole voyage; I pretend not to ascertain its accuracy in particulars, nor shall I trouble myself or the reader with fractions; one thousand one hundred and eleven of these stadia, with a fraction, make a degree of a great circle; fifteen of these stadia, with a fraction minus, are equal to a Roman mile of seven hundred and fifty-six

toises; and sixteen, with a fraction plus, are equal to a mile English of eight hundred and twenty-six. I shall neglect all these fractions, because accuracy is unattainable in the application of individual distances. To state this precisely where precision cannot be obtained, is affectation. I use the toise, a French measure, because Mr. d'Anville's is the best calculation on this subject.

<sup>8</sup> Arrian has no where given us the name of the western channel, but Ptolemy calls it Sagapa, and places it in longitude 110° 20', latitude 19° 50'.

<sup>9</sup> One hundred stadia.

creek " or inlet called Stoorá", where they continued two days ; on the following day they weighed again, but came to an anchor at Kaumana" before they had proceeded two " miles. In the creek here they found the water salt, or at least brackish, even upon the tide of ebb. The next day's " course was little Oct. 5. more than one " mile to Koreátis ; and scarce had they weighed from hence before they were checked by the violent agitation now visible at the bar " ; for as they had proceeded with the tide of ebb, the wind was consequently in a direction exactly opposite. This brought them to an anchor again immediately ; when, after waiting till it was low water, they observed that the projecting sand (which probably formed the bar) was soft and oozy near the shore, and little more than a quarter of a mile in breadth. This they determined to cut " through, as the readiest and safest passage into the open sea. They had so far effected their purpose during the recess of the tide, that upon the return of the flood they carried their vessels through it " in safety, and after a course of about nine miles " reached Krókala the same Oct. 6, 7, 8. day. Here they remained the day following.

" δῶρυχε μεγάλη, a large nullah.

" I shall preserve generally the Greek orthography for the contemplation of Oriental etymologists.

" In the present desolation of this coast and the Indus, it is not probable that any relation to Stoorá, Kaúmana or Koreátis, should be discoverable ; they appear all to be names of nulláhs cut for purposes of agriculture or communication ; and these nulláhs, we may conclude, have been all obstructed. I preserve the names, however, for the consideration of such as may hereafter visit this country. The names in Gronovius's best MS. are written Kaúmara and Koreeatis. Koreacátis, Dodwel, Geog. Min. Freinshem. Curt. ix. 9. 9.

and ix. 9. 20, mentions, on the authority of the academicians at Coimbra, the violent tides on this coast, and the necessity of these nulláhs, or δῶρυχες, for the safety of vessels which navigate either the coast or the river.

" Thirty stadia.

" A day not specified, but allowed.

" Twenty stadia.

" ἱμα. Scindi bar is known to all navigators on this coast, and I imagine every mouth has its bar.

" I have allowed two tides for this, or twenty-four hours ; it possibly was one only.

" Mouth of Lari-bundar river, in latitude 24° 44'. Rennell, Postscript.

" Allowed two days.

## ARABIES, OR ARABITÆ.

KRÓKALA.  
CROTCHY.  
Oct. 9.  
First station.

Krókala<sup>20</sup> is the Crotchey<sup>21</sup> bay of Commodore Robinson; and it is with infinite concern I repeat the complaint of Mr. Dalrymple, that the views which were taken during this gentleman's survey of the coast never reached his hands. I present to the reader, however, a Plan<sup>22</sup> of this Bay, by Lieutenant Mascall, taken in 1774; and I feel great satisfaction in exhibiting the first harbour in the Indian ocean, in which an European navy ever rode. Krókala<sup>23</sup>, says Arrian, is a sandy island, and such an island, dry<sup>24</sup> at low water, we still find in this bay. It lies

<sup>20</sup> Crotchey seems to have been the port of communication with the Afghans in 1792, 1796, and 1799, as appears from Tippoo's orders to his vakeels to land at Keranchy, and carry his dispatches to Zemaun Shaw; from which we may conclude, that Scindi and Tatta were in hostile hands, for notice is taken of a communication with Cutch and Keranchy, but none with Tatta and Scindi. See Ind. An. Register, 1799, p. 227, at which time a Nusseer Khan seems to be in power in Scindi, but whether on the Indus or not is uncertain. Ibid.

See (Ind. An. Reg. 1800, Chronicle, p. 70.) a description of Caranje, and mention that the passage by Lari-bundar was rendered impracticable, but whether by the nature of the channel or the government of this Nusseer is not said.

The navigation of the Indus is now abandoned, as I find by the paper communicated by Mr. H. Jones.

<sup>21</sup> Written Caranchy Carrangee, &c. and by Gronovius, Κρόκλα (Crókela), from his best MS. The Greek language has no *ch*.

<sup>22</sup> Furnished by Mr. Dalrymple. Lieutenant Mascall was an officer on board Com-

modore Robinson's ship. [See a Plan of this Bay in Chart, No. 1.]

<sup>23</sup> From the mouth of the Larry Bunder river is seen part of the high land over Crochey. There is nothing remarkable between that place and Crochey. The land by the water-side is low, interspersed with shrubs; but up the country there are several hummocks of moderate height." Lieutenant Porter. Com. Robinson, p. 1. This is the rising to the ridge at Cape Monze, which I have marked before as the eastern limit of the Arabitæ. "Crochey (the town) was formerly under the Bloaches, but is now seized by the prince of Scindy." Id. p. 2. It is five miles from the bay, and one from a creek which falls into the bay. The people are described as civil. Possibly the Belootches are not worse robbers than their more refined neighbours.

<sup>24</sup> Major Rennell supposes Crotchey to be the port of Alexander. Postscript. But that is impossible, as the fleet evidently passes Cape Monze before it reaches that port.

<sup>25</sup> I here follow the authority of Lieutenant Mascall's drawing; but Lieutenant Porter's journal says, there are several islands to the

in latitude  $24^{\circ} 28'$  twelve leagues from Scindi bar, and, according to Captain Prittie's chart, ten<sup>25</sup> nautical miles from Laribundar river. The latter distance is so nearly correspondent with the measure I assign to Arrian, that I regard it as a full demonstration of the identity of the place, and a high testimony of the accuracy of the journal. If I were curious to reduce the two distances to a coincidence, I might add some fractions to the stadia, and suppose the cut through the sand<sup>26</sup> to have shortened the course. But I mention once for all, that where I find a general correspondence I shall not insist upon minute difficulties.

But if the distance from the bar to Crotchey is established, the course from the point of departure to the bar must be of necessity allowed; both are given at an hundred and fifty stadia by Arrian, and if one is true, the other can hardly be erroneous. However, therefore, I may be mistaken in my position of Killoota, or my conjecture of its identity with Dive-il-Scindi, I afford means for the correction of my error by any future navi-

northward; and that the entrance into the bay is generally between a promontory, on which a white tomb stands, and the largest of the islands. This island can hardly answer to the *νῆος ἀμμῶδες* of Arrian. (Lieutenant Porter. C. Robinson, p. 1.) For by the plan it appears high; and I conclude the low island mentioned by Arrian to be that sand in the heart of the bay, dry at low water. Probably the first isle mentioned at C. Eirus by Arrian, and marked as a shoal by Dalrymple, is likewise dry at low water, or visible some tides. It is sufficient, however, for Arrian's assertion, that this shoal should mark such a spot, which, though visible formerly, may be now constantly covered by the sea.

<sup>25</sup> It is very singular that Pliny, lib. vi. c. 21. mentions Crócala as twenty miles distant from the Indus, because his twenty, according to d'Anville's reduction of his miles, is exactly ten, as he reckons by the common stadium; but he read 150 stadia in Nearchus, as we do now, making  $18\frac{1}{2}$  miles, which he reckons 20.

<sup>26</sup> However extraordinary or superfluous an attempt of this kind may appear to modern navigators, the difficulty of carrying a fleet of Greek gallees out to sea in opposition to the monsoon, is at least as great as the danger Xerxes would have encountered in doubling Athos: and even after the neck of that promontory was cut, he had two more to pass.



gator who shall visit the river with a knowledge of the present work. I conceive the cut through the sand to be made at the point where the bar formerly joined the western shore of the Lari-bundar channel; and in any position about nine or ten miles above that, which affords security from the tide of flood and the prevailing monsoon, I consent to place the station<sup>27</sup> from which Nearchus departed.

At Krókala, Arrian places the commencement of the territory of the Arabies, and its termination at the river Arabis. The aspect of the inner country from the sea, as given by the modern journals, is perfectly agreeable to this position and the rising of the land from hence to Cape Monze, consistent with the idea I had formed from consideration of the author's text.

Weighing from Krókala<sup>28</sup>, the fleet proceeded to the west, having a promontory named Eirus on the right, and a low island almost level with the sea on the left; this isle runs parallel with the coast, and so near as to leave only a narrow channel<sup>29</sup> winding between both. They cleared this passage,

INDUS.  
EIRUS.  
CAPE  
MONZE.  
Oct. 9.

<sup>27</sup> The ναυστάθμος of Arrian.

I am persuaded it is on the eastern side of the channel.

<sup>28</sup> Crotchet town is situated about five or six miles from the place where the ships lie. It is fortified with a mud wall, flanked with round towers, and has two useless cannon mounted. It formerly belonged to the Bloachees (Belootches); but the prince of Scindi finding it more convenient for the caravans out of the inland country, which cannot come to Tatta, on account of the branches of the Indus being too deep for camels to pass, he obtained it from the Belootches by exchange, and there is now [1774] a great trade. Lieutenant Porter, p. 2.

This prince of Scindi was a Mahometan of Abyssinian extraction; his residence at Hydra-

bad on the Indus, near Nusserpoor, which lies not far from the head of the Delta. Rennell. Postscript, p. 291.

From Porter's account, I collect that Hamilton's route must have been within the Delta, for his caffila or caravan consisted of fifteen hundred beasts, as many men and women, with two hundred horse; all these must have crossed the Indus, or Lari-bundar river, at least once, if not twice, had they marched to the westward of the stream, which, by Porter's account, appears impracticable; if so, Major Rennell's position of Lari-bundar and Dungham is on the wrong side of the river.

<sup>29</sup> γινόν κοιλόν. Fretum sinuosum.

I would render it with an allowable licence, a passage curving with the land.

and doubled the Cape, apparently under the protection afforded by the islet against the prevailing wind ; the coast, as soon as they had passed the streight, presented a bay or harbour under cover of a second island called Bibacta, not more than three hundred <sup>30</sup> yards from the entrance.

This harbour Nearchus thought so large and commodious<sup>31</sup>, that he honoured it with the name of Alexander, and determined to avail himself of the security it afforded, till the season should be more favourable for his progress. A camp therefore was formed on shore, and fortified with an inclosure of stones to guard against any attempt of the natives ; and this precaution was no more than necessary, as they were now within the confines of the Arabítæ, whom Alexander had attacked and dispersed not many days before their arrival. Security both from the natives and the season they found ; but the people suffered greatly, having no water but what was brackish<sup>32</sup>, and little food to support life except muscles<sup>33</sup>, oysters, and another species of large shell-fish<sup>34</sup> which they collected on the shore.

Such an harbour as this port of Alexander is described, ought to be more discoverable on this coast at present than in reality it is ; for Lieutenant Porter slightly mentions, that as soon as you are round the Cape there is a *kind of bay* ; but with whatever indifference an English navigator might view this, it was really an haven to a Greek fleet of gallies, affording good

<sup>30</sup> ῥαδίως δύο ἀπείχουσα.

<sup>31</sup> μέγας τε καὶ καλὸς ὁ λιμὴν. *A large and good harbour.* In what sense our author uses this expression will appear at the A'rabis, or Sommeany.

<sup>32</sup> ἄλμυρόν.


<sup>33</sup> Μύας θαλασσίως. Any shell-fish, says

Salmasius, which has two shells to open and shut. From μύειν, nictere. Exercit. Plin. p. 1129. Gronovius in loco.

<sup>34</sup> Σαλπίς is explained by neither ; but as solen signifies a *pipe*, it may be a species of large muscle, with oblong hollow shells.

anchorage under shelter of the island ; and however slight our modern intelligence is of the harbour itself, the position of it is indubitable ; for Eirus is Cape Monze, and Bibacta<sup>35</sup>, Chilney Isle. Upon this point there can be no hesitation, since the publication of Mr. Dalrymple's last chart of the coast. Previous to that, I had looked in vain for the two islands described by Arrian, where I could find one only ; but the new chart gives a sand (dry<sup>36</sup> perhaps only at low water) in the very position off the Cape as laid down by Arrian ; and Chilney, for a second island corresponding exactly with the Bibacta of that author.

Cape Monze, according to Major Rennell<sup>37</sup>, lies in longitude east from Greenwich 65° 46', and in north latitude 24° 55'. Commodore Robinson's chart does not mark the longitude.

Chilney Isle<sup>38</sup> appears immediately as you are passed the Cape, lying off shore to the south-west in the very direction for covering the fleet in the bay, and of a height sufficient to interrupt the blast of the monsoon ; for it is near a league long, and rises as it is exhibited in this form<sup>39</sup> :  It is the

more material to fix this point accurately, as we cannot depend

SANGADA  
Place.

<sup>35</sup> The Bibaga of Pliny, lib. vi. c. 21. *ostreis et conchylis referta*, xii miles from Crocala. i. e. 6. deinde Toralliba, read Coraliba in other MSS. Query, whether Khor-Araba ?

<sup>36</sup> Mr. Dalrymple's chart does not authorise me to say that this sand is ever dry. But the position is so precisely conformable to Arrian's narrative, that there can hardly be a doubt but it was above water, and visible to Nearchus two thousand years ago.

I have since received the following remark from Captain Blair : "Commodore Robinson's

" little squadron rounded Cape Monze at a considerable distance, to avoid a shoal which extended to the southward of that promontory. This shoal might probably have been the low isle mentioned by Nearchus, gradually diminished by the action of the sea, agitated by the south-west monsoon."

<sup>37</sup> Postscript.

<sup>38</sup> Longitude 60° 40' from Gibraltar, north latitude 24° 55'. De la Rochette.

<sup>39</sup> It is called Camelo by a French chart in Mr. Dalrymple's Collection ; and the same name occurs in one of Purchas's early voyages.

fully on any other till we come to the river A'rabis. From Cape Monze to that river the coast falls in with a sweep or hollow, round which we must trace the course of the fleet close in shore ; but we cannot hope to ascertain the site of stations where we have in the journal itself names only without habitations ; and where, if ever habitations arise, the neighbourhood of the Be-lootches will hardly allow them to be permanent. The place and district around are called Sângada by Arrian, and the situation of the camp was evidently on the narrow stripe of low ground which extends close to the sea, all round the sweep from Cape Monze to Sommeany, or the A'rabis, with a chain of high land at its back, which terminates at the promontory.

In this camp Nearchus remained four-and-twenty days ; during all which time the monsoon continued without wavering, and with unremitted violence. This interval brings our account down to the third of November, before the fleet could again proceed ; a date that accords essentially with the day assumed for the original departure from the Indus : for the monsoon changes in the middle of November, and there is always an interval of fluctuation between the termination of one and the commencement of the other. Some remission of this sort might regularly occur about the third of this month ; and it will appear

BIBACTA  
Isle.  
PORT of  
ALEXAN-  
DER.  
Oct. 10.  
Second  
station.

This name is originally from the Portuguese map of Texeira, dedicated to the king of Portugal, 1649, in Thevenot's Collection, 1663, vol. ii.

That map specifies

Camelo	= R. Araba,
Prom. dos jllicos	= Cape Araba,
Palamete	= Kokala,
Calamete	= Kalama,
Rio dos houtaques	= Tamerus,

C. de Guadel	= Alambateir,
Tanca banca	= Tidj,
Rio de giskin	= Salarus,
Cabo de Jasques	= Jusak,
Rio de Braim	= Ibrahim.

And it is very remarkable that the same map seems to mark the Lacus Chaldaicus of Pliny above Basra ; only that it is unfortunately on the Euphrates instead of the Tigris.

Fifth and  
sixth station.  
Nov. 6.  
Thirty-sixth  
day.

both, after a course of about nineteen miles they came to Morontóbara<sup>40</sup>, a harbour with a narrow entrance, but safe, capacious, landlocked all round, and protected from the wind in every quarter. They thought it no small achievement to have passed these rocks in safety, for there was a great ripple, and the tide was out<sup>41</sup>.

I should wish to identify these rocks with the rock of Lieutenant Porter, which he lays down ten miles from Cape Monze; neither do I think the distance a great objection; for though I make it more than four-and-twenty miles by Arrian, it is evident that Nearchus kept as close as possible to the shore, making an arc of a circle, while Lieutenant Porter describes the diameter. But there are two<sup>42</sup> rocks in Arrian, and only one in the English journal; this circumstance excepted, there appears no great difficulty in assigning the same position to both. I place Sákala and these rocks at no great distance from Saranga, because the fleet appears to have anchored at the former, upon coming in sight of the rocks<sup>43</sup>, soon after it had weighed on the fifth of November; and Morontóbara<sup>44</sup> I place seventeen or

<sup>40</sup> The Florentine MS. reads Μοροντοβαρβά-  
ροις, Morontobarbara.

<sup>41</sup> κατὰ ῥηχίαν γινώσκει γὰρ ἀνάπνευσι κατενχε.

<sup>42</sup> Within these thirty years there were three Needle rocks at the western end of the Isle of Wight; there are now only two.

<sup>43</sup> I by no means *insist* on Lieutenant Porter's rock for these two; though the circumstances are probable, his rock, in point of distance, agrees better with Domæ.

<sup>44</sup> Morontóbara will hereafter obtain an etymology either Arabic or Sanskreet; and if ever this coast should be visited again, the harbour may perhaps be found, or the place occupied by it be ascertained.

ὁ δὲ λιμὴν μέγας καὶ ἱσχυρὸς καὶ βαθὺς καὶ ἄκλυτος· ὁ δὲ ἱσχυρὸς ἐς αὐτὸν γινώσκει.

Literally, "the harbour is large, well protected from wind on all sides, runs far within the land, and is perfectly quiet; the entrance into it is narrow." I render ἱσχυρὸς sheltered, and βαθὺς running inland, from Homer's βαθύκολπος; and I wish a reference to be made from this passage to the description of the Port of Alexander, which the author calls only μέγας καὶ καλός, large and good, and which a bay might be without being entitled to the other characteristics so particularly given to Morontóbara.

eighteen miles by the bend of the coast to the north-west of the rocks. This harbour, or something to represent it, I have no doubt will be found, if ever this coast should be explored again; for the description of it is very precise in Arrian, and its name (which in the language of the natives signifies the Port of Women) is the only one of Arrian's on this coast, which is retained by Ptolemy and Marcian of Heráclea.

That the course of the fleet was close in with the shore is apparent from the particulars already specified; and that the monsoon was not yet changed is equally evident from the danger encountered in passing the rocks at Sákala, for if the wind had been at north-east it would have been off the coast; but it is clear, from the turbulence of the sea, that it still blew from the opposite direction, and lay full upon the shore. Both these assumptions will be justified still more by observing that the following day, when they left Morontóbara, they preferred an intricate course "between an island and the main, (so narrow" that it appeared rather an artificial cut than a natural channel,) to the open passage without side of the island.

The harbour of Morontóbara, with all its conveniences, presented nothing to tempt men to a longer delay, who for almost forty days had found but a scanty supply of provisions, and seem to have supported life by such casual means as the shell-fish on the coast afforded; they left it therefore on the following

" There is every reason to believe that it was an arm of the Arabis flowing round an island, now perhaps choked; or, if capable of investigation, of no service in the present state of nautical knowledge.

" " From Cape Monze to Sounamenie the coast bears evident marks of having suffered considerable alterations from the encroach-

ment of the sea. We found trees which had been washed down, and which afforded us a supply of fuel. In some parts I saw imperfect creeks in a parallel direction with the coast. These might probably be the vestiges of that narrow channel through which the Greek gallees passed." Capt. Blair.

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ARABIS  
RIVER.  
Nov. 7, 8.  
Seventh  
station.  
Thirty-  
seventh and  
thirty-eighth  
day.

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day, and proceeded towards the river Arabis<sup>56</sup>, having an island on their left, and the main on their right. The passage through this channel was somewhat more than four miles<sup>57</sup>, but so narrow, as to appear like a work of art; the coast was woody, and the island in a manner overgrown with trees of all sorts. They did not clear the passage till the following morning, when they found the tide out, and the water shoal and broken<sup>58</sup>; they got through however without damage, and, after a course of between seven and eight miles, anchored at the mouth of the Arabis.

This river is the western boundary allotted to the Arabies by Arrian. According to d'Anville and de la Rochette it still re-

<sup>56</sup> Arbis, Arabius, Araba, Artabis.

See a very long note of Salmasius, Plin. Ex. 1177, to prove that Arbis is the true orthography; but C. Arrubah or Arraba proves the contrary.

<sup>57</sup> Seventy stadia.

<sup>58</sup> ῥαχίον. Gronovius has noticed the error of former editors, who render this word usually by *rupes*, *scopulus*, *locus scopulosus*, *littus scopulosum*, &c. and in this instance, *per angustā quædam loca*; but he has not with his general accuracy defined the proper meaning. I shall every where render it either *surf*, or the *shoal* which causes the surf; for the whole coast, both of the continent and islands in the Indian ocean, is exposed almost constantly to a very extraordinary surf. See Marsden's Sumatra. And if it is not surf in this one instance, it is the breach of the sea arising from the straits, or narrowness of the passage; κατὰ ῥαχίον συνέη. The word occurs frequently in the journal, and is used ῥαχίον, ῥαχίον, and ῥαχία, from ῥήσσω *frango*, *cum strepitu allido*. Lennep. in voce. And so ῥάχης *dorsum*, à *junctura vertebrarum*, (*potius disjuncturâ*,) capability of separation, from ῥήσσω. Thucyd. lib. iv. p. 10. Scholiast. ὅθεν τὸ νῶτιον ὀσῶδες, ῥάχης καλεῖται, ὡς ἀπὸ τῆς

ῥαχίας τῆς πύρας. This seems to favour the editors' rendering *rupes*, *scopulus*. So also, ῥαχία ἐστὶ πύρας τῆς πέρας, περὶ ὃν περιέχονται ἡ θάλασσα, καὶ ὁ κλύδων, καὶ ἡ τῆς θαλάσσης ἑρμῆ. Notæ ad Polybium. Schweighæuser, vol. v. p. 573. But, notwithstanding this high authority, I am disposed to think, that, in Arrian at least, it is the surf simply, and used frequently without reference to the rock, or rocky ground, which the surf breaks on; for at Kókala the surf ran so high upon the arrival of the fleet, that the people could not land; on the following day, however, they all got on shore, hauled up the vessels, and formed a camp. If the rocky shore had been the obstruction, that circumstance would have existed the second day as well as the first. But a stronger instance will occur at Cape Jask, which is, by the testimony of all our navigators, a low sandy point: but there, also, the term ῥαχίον is applied; where Mr. d'Anville is so misled, by reading *rupes* or *scopulus* in his authors, that to find a rock he recurs to the assistance of Bombareek, which is at seven or eight miles distance by his own account.

ῥαχία is adopted by Agatharchides, and

tains the name of A'raba, with the additional appellation of Il Mend. Their authority for A'raba I know not, but I have no doubt that it is a native term, from the preservation of it in Cape Arrubah<sup>59</sup>, which lies not far to the westward; and that Il Mend is a title which, if due, it has acquired from the Persians. At this point we must pause, to consider the course of the fleet from the Indus. Three positions are clearly established; Krókala corresponding with Crotchey or Carantchy, Eirus with Cape Monze, and Bibacta with Chilney Isle, where I fix also the Port of Alexander; these, with the mouths of the Indus and A'rabis, give five fixed points on a coast of about eighty miles. The rocks off Sákala<sup>60</sup> are possibly without great difficulty reducible to Lieutenant Porter's rock; and Morontóbara is so characteristically distinguished, that it cannot be mistaken if the coast should be visited again. Domæ, Saranga, and Sákala, it will not be thought negligent to leave undefined upon a coast that is now almost desolate, and where, if villages<sup>61</sup> have formerly existed, they may have been destroyed by the incursions of the Belootches.

The number of stadia given by Arrian and Strabo from the Indus to the A'rabis is a thousand; and, what is not very usual in Greek authors, the particulars answer to the total. These reckoned by Mr. d'Anville's stadium make sixty-three miles and

rendered by Wesseling, Diod. lib. iii. p. 104, Crepido.

<sup>59</sup> Arrabah, or Arraback, by Lieutenant Porter.

<sup>60</sup> According to Bruce, Sakala is the roof of a house, and rocks are so called which have that form. See vol. ii. p. 573. and vol. iii.

Sákala is said to signify either *rock* or *mountain* in several of the Oriental languages. The

Nile rises from a Sákala, according to Bruce and Lobo.

<sup>61</sup> Sákala and Saranga do not appear as places inhabited, by the journal; and Domæ is an isle. Whether future inquiry may make this Lieutenant Porter's rock, remains for investigation. I am induced to doubt it, both from the distances given, and the distinction between an isle and a rock.



an half; but there is an omission of distance between Krókala and the Port of Alexander, and another minute one between Saranga and Sákala. The addition of these might possibly make the estimation something short of eighty miles, which accords sufficiently with the best charts I have seen. When we reflect that a Macedonian fleet spent near forty days in completing a navigation of this length, we may form a judgment of the courage requisite to undertake and execute the whole voyage. We discover, at the same time, the difficulties which arose from setting out before the regular season; and while we admire the perseverance of Nearchus under the disadvantage of adverse winds, and the pressure of famine, we have the satisfaction to find that the dates assumed are corroborated by the circumstances of the navigation.

The mouth of the A'rabis<sup>62</sup> is placed by Ptolemy in longitude 105°, and latitude 20° 15', and by Mr. Rennell in longitude 65° 34' from Greenwich, latitude 25° 26' and about 44' west from the western mouth of the Indus<sup>63</sup>.

Arrian mentions an island<sup>64</sup> at the mouth of the river, which Lieutenant Porter does not notice; but says the bar runs out a long way, and is dry in some parts at low water. There is still a small town called Sommeany<sup>65</sup>, at the entrance, and labouring under the same difficulty for water which is noticed by Arrian, who mentions that they were obliged to go up the country above two miles to find a well<sup>66</sup>. Lieutenant Porter says, "every

<sup>62</sup> Mr. Rennell has placed the Arabis to the eastward of Cape Monze in his first map, but corrected it in his second.

<sup>63</sup> Bishop Horsely prefers the Latin translation to the Greek text, as agreeing with the termination of Karmania.

<sup>64</sup> Arrian's island is high.

<sup>65</sup> It is written Sounamenie by Capt. Blair; and Souna, he says, signifies gold in the Moors' language, that is, in the language of the Mahomedans in Bengal: it may therefore have an origin in Persia.

<sup>66</sup> λακκὸν. Perhaps a pool.

“ thing is scarce, even water, which is procured by digging a  
 “ hole five or six feet deep, and as many in diameter, in a  
 “ place which was formerly a swamp; and if the water oozes,  
 “ which it sometimes does not, it serves them that day, and  
 “ perhaps the next, when it turns quite brackish, owing to the  
 “ nitrous quality of the earth.” We shall find the same identical circumstance introduced by Arrian at a future period of the voyage. Minute facts of this nature exemplify the authenticity of the journal better than all the arguments that can be produced against Hardouin and Dodwell.

It does not appear from Arrian that the place was inhabited when Nearchus was there, but he calls the harbour large<sup>87</sup> and commodious, and says that shell-fish, with others of various sorts, were found here in great abundance. Marcian mentions two cities upon the river Arbis, Persis<sup>88</sup> and Rhaprava on the coast between the river and Morontóbara; the distance between the two latter he states at a thousand and fifty stadia, which by no means agrees with Arrian, and gives reason to suspect that he confounded the Port of Women with the Port of Alexander, for his next station is Koiamba, where he fixes the limits of the Pattalênè<sup>89</sup>, possibly the Krókala of Arrian; and lastly, Rhizan and Rhizana for the termination of the coast, as it should appear, at the Indus. In the whole of this account Marcian fol-

<sup>87</sup> μέγας καὶ καλός. The same expression as that applied to the Port of Alexander. We may judge of one by the other; for Lieutenant Porter mentions no harbour here but the mouth of the river.

<sup>88</sup> Persis he writes Persith, and calls it the capital of Gadrósia, which cannot be in this country. It should seem that he had heard of such a city, but did not know where to place it. It is in reality the Pura of Gadosia men-

tioned by Arrian and others, and the sound of which is still preserved in Phir, Phor, and Phor-eh. Ptolemy has a Parsis with evidently the same confusion, p. 167. Written Ἡασις μητροπόλις for Πάρσις.

<sup>89</sup> Marcian evidently intends to place Koiamba at the mouth of the western channel; but I suspect he has confounded the limits of the Arabies with those of the Pattalênè.

lows Ptolemy in his list of names, but is so barren of facts, and so vague in his distances, that little information can be obtained from him. His whole length of the coast amounts to fourteen hundred and fifty stadia.

## II. OREITÆ. ORITÆ<sup>70</sup>.

ORITÆ.  
PAGALA.  
Eighth  
station.  
Nov. 9.  
Thirty-ninth  
day.

No mention is made of any stay at the A'rabis, we must therefore make the fleet sail the following day, and proceed twelve miles and an half to Págala. The course is described as close along the coast, and a surf at the place where they finished their progress, but the anchorage was good. The men were forced, however, to continue on board, and only a few landed to procure water. Such a spot as this can be characterised only by its distance; and our measures, which answer sufficiently along the coast of the Arabies, will now be less capable of accuracy in many particulars, till we reach the gulph of Persia.

KABANA.  
Ninth  
station.  
Nov. 10.  
Fortieth day.

They sailed the next morning, and after a course of almost nineteen miles reached Kábana in the evening. The place was only an open and desert shore, on which a violent surf broke, which hindered the vessels from approaching the land. The progress of these two days sufficiently indicates that the wind was not yet settled at north-east, and in the present day's course they experienced directly the reverse; for a strong gale came on from the south-west, in which two of the gallies and a transport foundered, but the course was so near the shore that

<sup>70</sup> Oritas ab Indis Arbis fluvijs determinat. panem ex his faciunt, ut refert Clitarchus. Hi nullum alium cibum, novere quam piscium, Plin. vii. c. 2. quos unguibus dissectos sole torreant, atque ita

the men were saved by swimming. If we advert to our date here, which is the tenth of November, we find such a coincidence with the turbulence accompanying the change of the monsoon, as cannot fail of exciting our admiration, while we observe, at the same time, that no instance of a similar calamity occurs afterwards in the journal.

They left this desolate place at midnight, and reached Kôkala next morning, after a course of about twelve miles. The coast here was such, that the vessels could not be drawn on shore, but rode at anchor beyond the surf. The suffering of the people was however so great, from being confined on board two nights<sup>1</sup>, that it was found necessary to disembark them, and form a camp on shore, which Nearchus fortified as usual. It is worthy of remark that, during the three days' passage from the A'rabis, we hear of no provision being procured except water; neither do the places where they anchored appear villages or inhabited country; if, therefore, the stock of grain which they brought out of the Indus was exhausted, as it probably was in an interval of forty days, we can find no means of supporting life, but such a supply of shell-fish as they might have procured at the

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KOKALA.  
Tenth  
station.  
Nov. 12.  
Forty-first  
day.

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<sup>1</sup> In vessels like those of the Greeks, which afforded neither space for motion, or convenience for rest, the continuing on board at night, was always a calamity. The gallees of Alexander had perhaps a deck; but the *Ἡμιόλαι* are exactly the vessels of Homer's age, the fore part and waist open for the rowers, with a deck raised over the hinder part; this in Homer is called *ἔρηρ*, and formed an elevation on which the steersman stood. On this deck, or under it, the persons on board sometimes slept, which the poet calls sleeping

*παρὰ πρὸς τὸν ἥμαρ*. Od. M. 32. For there, perhaps, the cables were coiled; but, when a whole crew was to sleep on board, this was impossible, and the suffering was in proportion to the confinement. This makes Ulysses complain, that restraint on ship-board rendered his limbs rigid and unfit for gymnastic exercise; and the same confinement, Captain Bligh says, chafed the limbs of his people, against which he found no other remedy but wetting their clothes in sea water.

A'rabis, where we are informed it was in plenty. But it should seem they knew that relief was at hand, for here it was that Leonnátus joined them, who had been left in the country by Alexander, with a particular charge to attend to the preservation of the fleet. He had, after the departure of the main army, fought a battle with the Orítæ and their allies, in which he had defeated them, killing six thousand of the enemy, and losing only fifteen<sup>73</sup> of his own horse, with Apollóphanes<sup>74</sup>, the newly-appointed satrap of Gadrósia. He now joined Nearchus, bringing with him a supply of ten days' provisions, collected by the order of Alexander, and possibly spared out of his own immediate wants. Not that this province ought to be represented as a desert like Gadrósia, but the circumstances of the time, and the resistance of the natives, rendered this supply rather proportionate to the condition of the country, than the wants of Nearchus. The attention of Alexander is still conspicuous; and a second unsuccessful attempt<sup>75</sup> he made in Gadrósia, when he would have hazarded famine himself to preserve his fleet, ought to exculpate him from the charge of useless vanity in penetrating through that desert region; a charge which even Nearchus is said to have countenanced.

To search for correspondent positions to these three desert stations would be superfluous; for as the next is the river

<sup>73</sup> I never feel myself bound to account for these disproportionate numbers. Leonnátus had with him at this time, possibly, a large force of native Asiatics. If a thousand of them had been killed, they would not have been thought worth notice. These fifteen are Macedonians.

<sup>74</sup> In another passage of Arrian, lib. vi.

p. 267, this Apollóphanes is said to have been deposed from his satrapy, when Alexander was halting in the capital of Gadrósia. See Gronov. p. 338. In the journal, Arrian follows Nearchus; in the history, Ptolemy or Aristobólus.

<sup>75</sup> See *infra*.

Tomêrus", at the distance of one-and-thirty miles, the two rivers give us the boundary of the four days' course, and as these are known points, the measures specified are sufficient to mark three places, which, being uninhabited, can be of no importance. I should have wished to have placed Kôkala with precision, on account of the transactions which took place here; for besides the supply obtained from the army, Nearchus discharged several of his people, who appeared not to have sufficient spirit or fortitude for the enterprise, and received others in exchange from Leonnátus: he likewise repaired here several of his vessels which had suffered in the voyage or the storm. This proves that the weather grew more moderate during his continuance at this place, for upon his first arrival the surf was too high to admit of drawing<sup>75</sup> them on shore. If therefore we shall, with Rooke<sup>76</sup> allow ten days for the completion of these affairs, it brings the account to the twenty-first of November; at which period the wind, if it had fixed at north-east, would be off shore, and the surf consequently diminished. This accords exactly with the following day's progress, for upon leaving Kôkala they sailed, for the first time, upwards of thirty miles, and it is the first time Arrian specifies their sailing with the wind<sup>77</sup> settled in their favour.

<sup>75</sup> The Tomêrus is apparently the river upon which inland Alexander halted, when he invaded the territory of the Oritæ. And probably it passes by Haûr, the capital of that tribe, who derive their name from Haûr, Horitzæ, Oritæ.

<sup>76</sup> It is not expressly said they were drawn ashore. The author afterwards, at the Tomêrus, uses the term *πυλῶσι*.

<sup>77</sup> Rooke finds ten days in his author, I can only find mention of ten days' provision; but

I think the allowance just.

<sup>78</sup> ἀκραι. See Hom. Od. Book 421. ἀκραὶ Ζήφυρον. Schol. ἄκρως πνίοντα πρὸς τὸν χεῖμα ὥστε πλέον ὥτ' ἔλαττον. Stephan. in voce.

But there is another derivation from *κεράνυμι*, *μὴ κεκραμμένον ἀλλ' ἀκρῶς Ζήφυρον*. *Purum Zephyrum*. And that derivation seems peculiarly applicable in this passage. It was the north-east monsoon settled, and without fluctuation.

The satisfaction of meeting with a supply of provisions would not be a little heightened by a sight of their countrymen again, after having experienced unfavourable weather and the danger of famine for six weeks ; additional confidence also would arise, not only from the change of the season, but from a consideration of the attention paid to their preservation by Alexander : the victory of Leonnátus contributed likewise to render the Macedonian name respectable to the barbarous tribes they were now to visit. All these circumstances considered, with the certainty of finding future support from the army, if possible, we may reasonably conclude that Nearchus embarked again with more confidence than before, and that the supply of men he received from Leonnátus came on board with alacrity.

I have looked in vain for authority to give the number of gallies or other vessels of which the fleet consisted. The number of commanders appointed at Nikêa was thirty-three, and by these I estimate the gallies. There was also a greater proportion of half-decked vessels, and transports in abundance. That Nearchus had transports as well as gallies appears by the wreck of one on the preceding day ; and if we were to allot him all <sup>19</sup> the gallies, it would, perhaps, not appear like exaggeration. The gallies were all of thirty oars ; if therefore there were only one man at an oar, we cannot estimate less than sixty <sup>20</sup> or seventy men to each vessel, which makes the whole number

<sup>19</sup> Q. Curtius mentions the destruction of such vessels as were superfluous before the departure from the Indus. It is much more probable that, if any were superfluous, they were laid up at Pattala, or the other dock-yards established in the Pattalene.

<sup>20</sup> Hanno had sixty ships of fifty oars, and carried 30,000 men on board. This seems impossible, unless he were attended by transports. See *Periplus* and Falconer, p. 20. A penteconter or galley of fifty oars may be seen in the Palestrine marble, published by Bartelemi. It is a large allowance to put a number of passengers or mariners on board equal to the rowers.

about two thousand", exclusive of those on board the transports. This number does not appear unreasonable; and conjecture is only allowable where accuracy is not to be obtained. None of the original officers appointed at Nikêa appear in the course of the navigation, except Archias and Onesícritus. Leonnátus joined the main army in Karmánia, and must have brought the first account of Nearchus's progress as far as the Tomêrus.

On the twenty-first of November<sup>22</sup> the fleet proceeded with a fair wind, and made good a course of thirty-one miles to the river Tomêrus<sup>23</sup>. The length of the course corresponds, as observed before, to the change of the season. Commodore Robinson, Lieutenants Porter and MacCluer, Tavernier, and Thevenot, all agree in fixing this change to the middle of November. All the circumstances of the voyage conspire to prove the difficulties previous to this period, and the advantages obtained after it was past. We are arrived at the last ten days of the month; and after the commencement of December there is no fluctuation. Tomêrus is described as a winter torrent, with a lake at its entrance. It appears to answer exactly to the stream Alexander had found inland very ill supplied with water, at which he halted after his pursuit of the Orítæ; and seems to come from the ridge of mountains which form the barrier of the whole coast to the north; where, in the season, rain falls in abundance, though none is seen in the low country between them and the sea. Lieutenant Porter repeatedly mentions the lowness<sup>24</sup> of the coast, and the appearance of the high ground

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TOMÊRUS:  
Eleventh  
station.  
Nov. 21.  
Fifty-first  
day.

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<sup>22</sup> See Sequel.

<sup>23</sup> In making the fleet sail on the tenth day from Kókala, and before, on the twenty-fourth, from the Port of Alexander, I have given two days which I might have added. In all that

affects a system, it is more honourable to give than to take.

<sup>24</sup> It is written Τόμηρος in the Greek.

<sup>25</sup> So does the journal of the Houghton Indiaman. A journal curious, because this



inland. As the same circumstance in regard to the rains occurs in Scindi from Moultan downwards, and in Egypt universally, is it not reasonable to conclude, that the same cause operates generally in the regions bordering on the tropic, and that mountains are as necessary for condensation, as vapours are for the cause of rain?

At the Tomêrus, the natives were found living on the low ground<sup>86</sup> near the sea, in cabins, which seemed calculated rather to suffocate<sup>87</sup> their inhabitants than to protect them from the weather; and yet these wretched people were not without courage. Upon sight of the fleet approaching, they collected in arms on the shore, and drew up in order to attack the strangers upon their landing; perhaps they were not unacquainted with similar visits of the Sanganiens. Their arms were spears, not headed with iron, but hardened in the fire, nine feet long, and their number about six hundred. Nearchus ordered his vessels to lay their heads towards the shore, within the distance of bow-shot, for the enemy had no missile weapons but their spears. He likewise brought his engines to bear upon them (for such it appears he had on board); and then directed his light-armed troops, with those who were the most active and the best swimmers, to be ready for commencing the attack. On a signal given, they were to plunge into the sea; the first man who touched ground was to be the point at which the line was to be formed, and was not to advance till joined by the

ship kept the coast in sight from Scindi to Comeroon, and back again; while most of the vessels which come from the eastward to the gulph of Persia stretch across the ocean from Guzerat, or the coast of Malabar, to Mascat in Arabia. Dalrymple.

<sup>86</sup> *βράχια*, marshes or marsh ground.

<sup>87</sup> *Καλύβαις πνυγρῶναις*. Such are the cabins described by Cook in a thousand instances, into which you must enter crawling, and when entered you cannot stand erect. A Hottentot village is styled a Krah. What is the derivation?

others, and the file could be ranged three deep. These orders were exactly obeyed; the men threw themselves out of the ships, swam forward, and formed themselves in the water, under cover" of the engines. As soon as they were in order, they advanced upon the enemy with a shout, which was repeated from the ships. Little opposition was experienced, for the natives, struck with the novelty of the attack, and the glittering of the armour, fled without resistance. Some escaped to the mountains, a few were killed, and a considerable number made prisoners. They were a savage race, shaggy" on the body as well as the head, and with nails so long and of such strength, that they served them as instruments to divide their food (which consisted indeed almost wholly of fish), and to separate even wood of the softer kind. Whether this circumstance originated from design, or want of implements to pare their nails, did not appear; but if there was occasion to divide harder substances, they substituted stones sharpened instead of iron, for iron they had none. Their dress consisted of the skins of beasts, and some of the larger kinds of fish".

Nearchus staid at the Tomêrus six days, during which time he drew some of his vessels on shore and repaired them; and this interval being specified, may make the former allowance of ten days at Kôkala appear too large. It is, however, a conjecture I have followed rather than formed; and considering that they were with their countrymen, had much business to

" Will not the reader think that I describe the landing of a party, from the Endeavour, in New Zealand, under protection of the ship's guns?

" These Oritæ are the next tribe to the Arabies or Belootches, whom Tieffenthaler

thus describes from Oriental authority: "Cette nation est barbare et féroce, portant les cheveux longs et sans ordre, laissant croître la barbe, et ressemblant à des faunes ou à des ours." Vol. i. p. 119.

" Seal-skins possibly.

transact, and had fortified a camp, I can hardly suppose there is an excess.

—————  
MALANA.  
CAPE  
MALAN,  
or MORAN.  
Nov. 27.  
Fifty-seventh  
day.  
Twelfth  
station.  
—————

The fleet left the Tomêrus on the sixth day, and, after a passage of nearly nineteen miles, reached Málana in the evening. At Málana, Arrian fixes the boundary of the Orítæ; and the distance from the A'rabis, the eastern limit, to this cape, being accurately specified by Mr. Dalrymple's chart, enables us to compare the stadium of Arrian with our modern measures precisely. The opening of the compasses gives eighty-five geographical, or nearly an hundred " British miles, and Arrian's total sixteen hundred " stadia. This is so exact a coincidence with the stadium of d'Anville, on a coast where there is little indenture, that it may be deemed a strong confirmation of the measure assumed by that able geographer. It is true that the particulars assigned to each day's progress give but fifteen hundred stadia; but, in the course from Págala to Kábana, the manuscript of Gronovius reads four hundred and thirty, instead of three hundred, which makes the whole sixteen hundred and thirty; and this Arrian expresses by a round number. So satisfied am I with the precision of my data here, that I have no scruple in fixing Págana, Kábana, and Kókala, by the measure of each day's sail; and as I observe Arrah ", Cudjerah, and Kingalah in Commodore Robinson's chart, I should have been

" In reality  $97\frac{1}{2}$ : hence 1 English mile is equal to 16,368 ÷ Arrian's stadia: hence Arrian's stadium is to the Olympic as 50 to 92 nearly, but more exactly as 504 to 909. Hence this stadium of Arrian's was shorter than what has been called Aristotle's stadium, in the proportion of 22 to 25 nearly. Bishop Horsley.

" D'Anville's stadium gives sixteen to a

mile British, with a very small fraction.

" There is a chart by Lieutenant Mascal, who was a volunteer under C. Robinson, which places these three names differently from the Commodore, and in positions which I could perhaps adopt; but it varies so essentially in other points, that Mr. Dalrymple does not esteem it highly.

happy to make them correspond in position as well as number; not that these obscure places are important, but because minute coincidences<sup>22</sup> are satisfactory in geography. The Orîtæ, who inhabit this coast, Arrian describes as dressed and armed like the Indian tribes; but that their customs, manners, and language mark them as a different race.

The territory of the Orîtæ is well defined by Arrian, bounded on the east by the A'rabis, on the north by a chain of mountains<sup>23</sup> running inland parallel with the coast, and on the west by a ridge shooting off from the grand chain, and touching the sea at Málana, or Cape Moran. This cape does not appear to project far or rise high, and I imagine is connected by high ground with Cape Arrabah<sup>24</sup>, about thirty miles to the westward. There can be little doubt that the name of Cape Arrabah<sup>25</sup> preserves the original appellation of the Arabite Belootches of antiquity, for though it is not within the limits assigned to that tribe by Arrian, the influence of these mountaineers has extended itself along the coast through the whole province of the Orîtæ, and as far as Cape Guadel. We have the fullest evidence of this from Lieutenant Porter<sup>26</sup>, who says expressly,

<sup>22</sup> If it should be thought necessary to investigate this point, a short table will shew all the particulars at one view.

	Stadia.	Miles.
From A'rabis to Pagala,	200 —	12½
{ to Cábana,	{ 300 —	{ 19
{ or by the MS. { 430 —	{ 27	
to Kókala,	200 —	12½
to Tomêrus,	500 —	31½
to Málana,	300 —	19
	1500 —	94½
With the number of MS.	130 —	8
	1630	102½

<sup>23</sup> "The land from hence (Sommeany, A'rabis) runs along extremely low next the sea; but the back is very cragged, and continues so to Cudjerah." Lieutenant Porter, p. 3.

<sup>24</sup> Arrabah, Arraback, and Arrubah.

<sup>25</sup> A plan of the bay, formed by the projection of Cape Arrabah, is given in the chart furnished for this work by Mr. Dalrymple; but as Nearchus did not anchor here, we are no farther concerned than to mention it.

<sup>26</sup> P. 6.

that the coast as far as that cape is now called Bloachee (the country of the Bloaches or Belootches), and from that cape to the gulph of Persia, Brodia. The Belootches, therefore, in carrying their arms westward, carried their original name with them, which is still preserved in Cape Arrabah; and perhaps, if we could investigate the name by which they distinguish themselves, we should find, whatever they may be styled by their neighbours, that they still retain some relation to this original appellation in their native language.

Mr. d'Anville<sup>99</sup> places Haûr as the modern capital of this province on the river Tomêrus, corresponding with the ancient Ora. In this, I conceive, he follows the Nubian Geographer<sup>100</sup>, who carries a route from the Indus through Manhabere, a town on the A'rabis, and through this Haûr to Firabuz<sup>100</sup> in the Mekran, or Gadrosia. Orêa is mentioned by the author of the Periplûs, but with so little precision, that nothing satisfactory can be collected from him. It is evident that this writer had personally visited the coasts of Arabia and Malabar; but he doubtless sailed with the fleet from Egypt, which at that time crossed the ocean by the assistance of the monsoon, and never approached the coast of Gadrosia. He therefore mentions only the bay

<sup>99</sup> Eclaircissement, p. 42. Antiquit. p. 44.

<sup>100</sup> Al. Edrifi. Nub. Geog. Lib. Relax. p. 58.

<sup>100</sup> Et via quæ ducit a Dabil (Debil-Scindi), ad Firabuz transit per Manhabare, et inter Manhabare et Firabuz media est *urbs quadam parva habitata, Haur appellata*. Urbs autem Firabuz est incolis et mercatoribus frequens, pertinetque ad provinciam Mekran. Nub. Geog. p. 58.—If the Nubian drew his information from Arabic sources, from whence did the Arabians draw? This Arabic work of

the twelfth century, if refined of its dross, would be found to contain much pure metal. Mr. d'Anville *could* have performed this service.

The Dabil of Al Edrissi he places three *stations* from the mouth of the Mehran (the Indus), that is sixty or seventy miles, which makes it nearly agree with Páttala. I suspect that Deb-il-Scindi, in its Oriental sense, comprehends the Delta, however afterwards applied to a part of it. Nub. Geog. p. 57.

of <sup>101</sup> the Terabdi <sup>102</sup>, which the ancients place between Cape Jask and Guadel, and then, with the incidental notice of Orêa, passes to the Sintius <sup>103</sup>. He seems to have mistaken the site of this place; for he says it is at the mouth of a river, and in the bay, whereas that imaginary bay terminates at Guadel, and this is far to the eastward of it. This error, if he really means Orêa for Ora, is excusable only on account of his not having visited this coast; for whatever he saw himself, he describes graphically. Ora <sup>104</sup> is laid down by Ptolemy in longitude <sup>105</sup> 102° 20', latitude 23° 40'; but as little would be gained by the method I have pursued in correcting his error, it is here omitted. The general name of Gadrôsia is extended sometimes by the ancient geographers to the whole coast between Karmânia and the Indus, as that of Mekran is by the modern Orientals; but the distinction ought to be made, of what is desert and what is habitable. The country of the Arábies and Orîtæ appears full of inhabitants, and no notice is taken of the army's experiencing any distress before Alexander crossed the mountains into Gadrôsia; from that line it appears that the desert commences, in passing which the army encountered greater difficulties than in the whole course of the service.

In detailing the coast of the Orîtæ, I find only three fixed points, the two rivers A'rabis and Tomêrus, with Cape Málana or Moran. Thevenot <sup>106</sup>, in his passage from the gulph of Persia, mentions Cape Malan, but he never came in sight of it; and

<sup>101</sup> Perhaps the Paragon Sinus of Ptolemy.

<sup>102</sup> On this subject, see *infra*.

<sup>103</sup> Sinthus is the name he uses for the Indus; and this proves his acquaintance with the native appellations Scind and Scindi.

<sup>104</sup> By Mercator's map it does not differ

much from the Ora of the Periplûs. The confusion seems to be general.

<sup>105</sup> Greek text. Long.  $\pi\gamma$   $\gamma$ —103° 20'. Lat.  $\kappa\gamma$   $\gamma$ —23° 20'. Bishop Horsley.

<sup>106</sup> D'Anville Antiquit. p. 44.

Thevenot, Eng. ed. p. 194. Part II.

his evidence, therefore, amounts to nothing more than proving the existence of the name still in the language of the country; and that Malan is the Moran of Porter cannot be doubted, either from its situation or the similarity of sound. The interchange<sup>107</sup> of the liquids *l* and *r* occurs in numerous instances, exclusive of the deception to which the ear is subject in receiving foreign sounds. The three other stations on this coast I can fix only by the distances given; they all appear uninhabited; and when we find names<sup>108</sup> given to obscure places so readily by Arrian, we are led to conclude that he had natives on board, to whom they were familiar.

As Lieutenant Porter mentions three names on this coast as well as Arrian, which are Arrah, Kudjerah, and the rocks of Kingalah<sup>109</sup>, it is possible that Kudjerah may be the Kôkala of Arrian; for we are to remember, the Greek language has no sound correspondent to our English *ch*, and Cochela is not very distant in sound from Gudjerah. Resemblance of this kind, where distances or local situation agree, is strong presumptive proof. Kábana is supposed to be Kingalah by de la Rochette.

The extent of this coast, given by Strabo, is eighteen hundred stadia; and if he drew from the original journal as well as Arrian, it is extraordinary that they should differ to the amount of an hundred and seventy stadia in so small a number: but this is perhaps only an additional instance of the little dependence upon all numerals in Greek manuscripts, rather than a

<sup>107</sup> Thus, Cray, French; Clay, English.

<sup>108</sup> Porter's are three names merely, and this is an Oriental practice; for thus Niebuhr speaks of the coast between Suez and Jidda.

On appelloit ancrages tous les endroits où notre petit vaisseau pouvoit être à l'ancre. Voyage, tom. i. 230. Amstard. Ed.

<sup>109</sup> Hinglah. Mascall.

proof of disagreement between the authors. Arrian's stadia, as corrected by the manuscript<sup>100</sup> of Gronovius, produce more than an hundred miles; Strabo's, an hundred and thirteen; and both accord so nearly with the chart of Commodore Robinson, which gives somewhat more than an hundred miles, that nautical mensuration, without the assistance of instruments, can hardly be reduced to greater conformity.

Here I should have closed the account of the Orítæ, but at Málana we find a circumstance recorded by Arrian which demands no small degree of attention; for here it is that he introduces the mention of a phénómenon, which, however familiar to the navigators of the present day, was, in his own age, a matter of no small curiosity. The sun, he tells us, was seen by Nearchus in the meridian to the north, and the shadows fell to the south. I shall translate the whole passage, before I enter upon the discussion of a subject which has exposed my author to much reprehension.

“ As they<sup>101</sup> sailed along the coast of India, [that is, the “ country of the Arabítæ and Orítæ, for the Ichthyóphagi are “ not accounted an Indian tribe,] Nearchus says, that the

<sup>100</sup> This MS. Gronovius found at Florence, in the Grand Duke's Collection. See Præfat. ad Lect. It evidently contains readings of the first importance; and the reconciliation of numerals is no small proof of its superiority. It is possibly the MS. brought by Aurispa from Constantinople in 1403. See Roscoe's Life of Lorenzo, p. 30.

<sup>101</sup> Παραπλέοντων δὲ τῶν Ἰνδῶν γῆν (τὸ ἐπὶ τοῦ, γὰρ ἐκείνῃ Ἰνδοῖς ἰσσι) λίγῃ Νίαρχος.

As this is introduced at Malana, so it is evident that Arrian considers the coast so far to be properly distinguished by the title of

Indian. Beyond this point the inhabitants were not Indian, either by descent or in manners. Whence the course is to commence, expressed by παραπλέοντων, is not clear, but probably from the Indus, and to terminate at Málana. No part of this course is within the tropic. Schneider's defence of Nearchus is founded upon a supposition, that Arrian is here speaking, and has taken his information from Nearchus, but applied it to a wrong place. I think this is positively contradicted by the text, λίγῃ Νίαρχος, and ὥφθη ἀντιθεῖσι. Let the reader judge.



“ shadows<sup>12</sup> had not the same effect as in those parts of the  
 “ earth with which they were acquainted, for when they stood  
 “ out to sea a good way to the southward, the sun<sup>13</sup> was either  
 “ vertical at noon and no shadow was to be seen, or so far to  
 “ the north that the shadow fell to the south. The northern  
 “ constellations, which are always above the horizon, set almost  
 “ as soon as they rose; and others which they were used to  
 “ contemplate, were either close to the horizon or not visible  
 “ at all. In this Nearchus appears to assert nothing impro-  
 “ bable; for at Syênè in Egypt, when the sun reaches the  
 “ summer tropic, they shew a well, in which at noon there is  
 “ no shadow; and as the same circumstance occurs in Méroè,  
 “ it is probable that in India also, which lies towards the south,  
 “ the shadow should be subject to the same law, and more par-  
 “ ticularly in the Indian ocean, which extends still farther to  
 “ the southward.”

In this account there is apparently little to perplex; but when we consider, that at Málana Nearchus was in north latitude  $25^{\circ} 16'$ , where these circumstances could not occur, it is not very easy to discover the reason for introducing them at a place not within the limit of the tropic. We must recollect also that we are now arrived at the latter end of November, when the sun was to the southward of the equator; and therefore, what-

<sup>12</sup> See Plin. lib. ii. c. 73.

In Indiæ gente Orêtum mons est Maleus nomine, juxta quem umbræ, æstate, ad austrum, hyeme, in septentrionem jaciuntur.

Whether Maleus and Malana be intended for the same may be doubted, upon a reference to lib. vi. c. 22.; but he there says, this intelligence is from Bêton: if so, Bêton as well as Nearchus are comprehended in the same charge

of error, or both misrepresented by the authors who have cited them. In the former passage of Pliny, I conclude that Maleus and Málana are the same, from the mention of the Orêtès or Orîtæ, and from a reference to Páttala in the next clause.

<sup>13</sup> I take some liberty to make this consistent.

ever licence we may assume in rendering the text, when it asserts that they stood out far to the southward, we may be assured that no Greek vessel ever stretched so far from the coast as to verify this phénómenon in the manner specified by the historian.

Neither Alexander himself, or any detachment from his army, was ever farther to the south than the mouth of the eastern branch of the Indus; and there, at the summer solstice, the sun might be vertical; but, from all we can collect, Alexander did not reach that point till the latter end of July, when the sun was again on his journey to the south; neither is it perfectly ascertained that the mouth of the Nulla<sup>14</sup> Sunkra is within the tropic: Mr. Rennell's last map and Mr. de la Rochette, it is true, bring it within that line; but till it shall be determined by observation<sup>15</sup> there is still room to doubt.

If this phénómenon, however, was to be recorded, it is extraordinary that it should not have found its place at the point farthest southward which the Macedonians ever reached; and that it should be reserved for Málana, when the fleet was nearly two degrees to the north of the tropic, and the sun southward of the equator. I would save the credit of Arrian, if it were allowable, by supposing that he spoke for Nearchus in this passage generally, rather as a circumstance known than experienced; but truth compels me to confess, that to my apprehension his language is too express to admit of general inter-

<sup>14</sup> See Gossellin *Geog. des Grecs*, p. 32; his chart of Scindi, latitude 23°.

who mentions that Onesicritus places Páttala within the tropic. *Plin. lib. ii. c. 75.*

<sup>15</sup> Mr. Dalrymple's chart, by C. Prittie, places Pandrummee in latitude 23° 13'; and in

If, therefore, Pandrummee is the eastern mouth, it is consequently within the tropic. I only mean to say it is not fixed by observation.

pretation: it is Nearchus speaking of what he had seen<sup>116</sup> himself, and I cannot acquit Arrian without making Nearchus subject to the imputation.

Nearchus, it is true, is enrolled by Strabo in the same list with Onesicritus, Magásthene, and other writers upon India, as indulging too much in narrations which are fabulous; but we have at this day far better means of comparing the accounts of these authors with the actual state of the country than Strabo had, and I must acknowledge that I have found Nearchus a most faithful and unerring guide. If I cannot excuse him in the present instance, I can join him in his error with companions so illustrious, that I hope the reader will pardon me for entering upon a digression in which the knowledge of the ancients in geography is materially concerned.

The increasing length of summer days and winter nights, in proportion to the approach towards the pole, was known as early as the age of Homer, and the corresponding phénomenon of the sun casting no shadow at the summer tropic<sup>117</sup> had evidently been observed by the Egyptians previous to all the astronomy of the Greeks with which we are acquainted. The spherical figure of the earth also, we are now told, was no secret to the Indians<sup>118</sup>, Chaldeans, Egyptians, and Phénicians; or if

<sup>116</sup> ὅθεν αὐτίκω.

<sup>117</sup> See Bruce on the Obelisks, Norden, Pocock, and Blair's excellent treatise on the Rise of Geography, who mentions that the well at Syène was made for the use of Eratósthene: but there is much reason to give it a higher antiquity.

Eratósthene reckoned the sun 408 myriads of stadia from the earth, 5,010,000 miles; the moon 78. Stobæus, lib. i. c. 27. p. 567.

<sup>118</sup> It does not appear from any thing I have yet seen that the Hiandoos knew the earth to be spherical, or ponderibus librata suis.

Heródotus mentions the opinion of some who asserted the earth to be spherical, but he ridicules the idea himself.

Aristotle de Mundo supposes the sphere to rest upon air or ether compressed.

How much better Job, xxvi. 7.

"He hangeth the earth upon nothing."

their discoveries, as antecedent to history, are the less regarded, we know from facts that Thales was acquainted with this important truth. If science had proceeded regularly upon these principles, the properties of a sphere might have led men to contemplate the proportion of these phénomena as well as the phénomena themselves, for they wanted neither knowledge or industry to observe them; but they failed in the result and combination of their observations. Thus it happened, that although Thales was acquainted with the spherical figure of the earth, and Anaximander had described the known world on a globe, yet it was not till three hundred and fifty years after Thales that Eratósthenes drew a line parallel to the equator, which suggested the doctrine of latitudes to the school of Alexandria, and finally enabled Ptolemy to apply both longitude and latitude universally to the science.

Arrian is contemporary with Ptolemy, but so little was he acquainted with this great discovery, or rather the application of it, that he has in no one instance made use of the term. It is evident, however, that he had a knowledge of the phénomenon produced by the sun in the tropic, from his mention of Syênè in this passage; and he could not be ignorant that southward of Syênè the sun might be seen <sup>19</sup> to the north; for he has

If the Book of Job is to be referred for its origin to Arabia, whence did the Arabians derive the knowledge of this sublime truth?

See Bacon de Aug. Scient. Book I. c. vi.

See gravitation and the earth ponderibus librata suis, asserted by Zeno. Stobæus, lib. i. 407. Ed. Heeren.

Pythagoras taught the knowledge of the five circles, arctic and antarctic, the two tro-

pics, and the equator; the meridian likewise from pole to pole, and the obliquity of the zodiac: but this honour is disputed by Cnephides of Chios, who had it from Egypt. Diod. lib. i. Stobæus, lib. i. in fine, who says, Thales taught the same.

<sup>19</sup> As he says himself in Meroë. Meroë, according to Bruce, is Atbara.

in another passage noticed the solstitial<sup>120</sup> rains in Ethiopia (Nubia or Abyssinia), as the true cause of the inundation of the Nile; and whoever verified this fact, which was known to Strabo<sup>121</sup> as well as Arrian, must have observed the shadow falling to the south. Arrian discovers his knowledge of all these circumstances in reasoning upon this extract from Nearchus, and Nearchus seems to have been as cautious in giving this fact as Arrian is in repeating it, when he says it took place, not actually upon the coast, but at some distance out at sea. So likewise Arrian does not assert that Málana lies upon the same parallel with Syênè, but carries the parallel out into the ocean. As all this was really true, if the fleet had been at Málana during the summer solstice, neither of these authors is culpable for any thing more than for asserting that as seen, which only might have been seen at another season; and if it were not for the positive assertion (*ὡφθη αὐτοῖσι*), *they saw it themselves*. The whole passage might be received generally or hypothetically, and the credit of both be established.

But if they cannot be defended, it will at least be some palliation of their offence, and a matter of no small curiosity, to shew how generally the vanity which gave rise to this error, existed in the writings of the ancients. Great travellers and great conquerors never thought their accounts or their progress sufficiently magnificent, unless they were carried to the boundaries of nature. Alexander is conveyed by his miraculous<sup>122</sup> his-

<sup>120</sup> Agatharchides is supposed to be the original authority for this discovery, and he had it from Bion, and Aristócreon, &c. whom Ptolemy Philad. sent into Ethiopia. Bion was five years resident. See Plin. lib. vi.

<sup>121</sup> Strab. lib. ii. p. 98.

<sup>122</sup> Q. Curt. lib. ix. c. 9. Ne naturam quidem longius posse procedere. Brevi incognita nisi immortalibus visuros.

The whole of this subject is worthy of dis-

torians to those regions on the north, where perpetual cold and darkness reign; on the east and south, to the utmost limits that the heat allows to be inhabited. But without recurring to such admirers of the hyperbole as Q. Curtius, we must reflect that Orpheus<sup>123</sup> carries his Argonauts to the Cimmerians, who never see the sun. And although it is no easy matter to discover where they dwell, still their country is excluded from the solar rays by the Alps, the Rhipéan mountains, and the rock of Gibraltar<sup>124</sup>. Homer claims the same privilege for Ulysses, for he conveys him to a region which enjoys the polar day<sup>125</sup>, which his commentator assures us must be the country of the Cimmerians, and yet the poet informs us that this was in the territory of the Lêstrygons, and Lêstrygónia is in Italy, just three days sail from Circè and the bay of Naples. Cêsar<sup>126</sup> speaks with the caution of an historian when he says there was no night<sup>127</sup> in the extremity of Britain, or the islands<sup>128</sup> lying north of Mona. Such, he says, was the information he received, but he had no opportunity of ascertaining it; he observed himself

cussion at large, if I could have ventured to indulge in it.

<sup>123</sup> Orph. Argonaut, l. 1116.

<sup>124</sup> The reader may think I indulge a vein of ridicule, but it is serious truth. Orph. Argonaut.

Ἰππῆα δὲ Κιμμερίους  
 Νῆα Θοὴν ἐπάγοντες ἰκάνομεν· οἱ γὰρ τι μένοι  
 "Αγλῆς ἀμμοροὶ ἴσι πυμβρόμῳ ἡλίω·  
 Ἐν μὲν γὰρ Ἴριπαιον ὕρος, καὶ ΚΑΛΠΙΟΣ αὐχὴν  
 Ἀπτολίας ἔργωσ', ἐπικέκλυται δὲ πελώρη  
 Ἄσσοι ἐπισκίασθα μισημῶνδ' ἡέρα Φλέγγη.  
 Δέιλον αὖ κρύπτεισι φάος ταυπηίης· Ἀλπεὺς  
 Κέκροισι μερόπισσιν, ἀχλὺς δ' ἐπικέκλυται αἰὲλ. 1125.

Phlegræ is in Macedonia, the Rhipéan mountains in Russia, Calpè at Gibraltar, and

the Alps in Italy; and though it has been said, by way of solution, that all these are only general names for mountains, and locality is not to be regarded, still this does not remove the difficulty, for in this passage the course of the Argonauts is evidently to the north. Virgil likewise places the Palus Mæotis under the pole, Georg. iii. which is in fact in lat. 45°.

<sup>125</sup> Εγγὺς γὰρ νυκτός τι καὶ ἡματός ἴσι κίλυθα.  
 Od. K. 86.

<sup>126</sup> Bel. Gal. lib. v. c. 13.

<sup>127</sup> If, by no night, he intends to say that it is not absolutely dark, he is not guilty of an error.

<sup>128</sup> He seems to mean the Hebrides.

only, that in Britain the summer days were longer than on the continent. Py'theas<sup>119</sup> of Marseilles went farther north himself, he was at Thulé, or Iceland; and here, he says, the day and night were each of six months continuance; a fact which is true only immediately at the pole, whereas Iceland unfortunately is not within the arctic circle.

I have not introduced these several accounts for the purpose of exhibiting them in a ludicrous view, but to shew that travellers, poets, and historians, have all conspired in placing a true phénomène in a false latitude. They had all heard that this took place somewhere in the north, and they have all fixed it at the extremity of their own knowledge, or the knowledge of the age they lived in. If, therefore, I cannot acquit Arrian or Nearchus of a similar error, I have at least, according to my promise, given them such companions in their error as to reconcile the reader, in some degree, to a vanity which seems to have pervaded so great a proportion of our ancient authors, and which may be thought pardonable at least, though by no means worthy of imitation. I trust that the veracity of Nearchus will not be impeached upon account of a single error, however ascertained it may be; and if the same assertion was found in Bêton, it is but just to allow, that receiving, as we do, the account through the medium of Arrian and Pliny, there might be some

<sup>119</sup> Py'theas is reprobated as a fabulist by Strabo, i. 64. ii. 104.; but he has found favour with his countrymen; for Huet thinks him not quite a dealer in fiction, and Gossellin discovers that, though he speaks little truth, he exhibits a knowledge drawn from purer sources, and a specimen of that geography which, though antecedent to all history, was better than that of the Greeks. This is a

system of Gossellin's, and by no means the valuable part of his work. *Geog. des Grecs*, p. 45, et seq.

Py'theas says, the tropic of Cancer becomes (or stands in lieu of) the arctic circle; which Gossellin explains, by supposing that he means the tropic of Cancer is always visible above the horizon. Strab. 114. Gos. 48.

omission, which it is impossible now to correct, and which, if we had the actual journal, we might still be able to reconcile to truth. It is true, the fact is introduced at Málana, but the text expressly says, that the phénómenon took place as they sailed along the coast of India: this affords some ground for alleviation at least, and to prevent the imputation of a direct falsehood, is the only excuse I have to plead for this digression.— I now return to conduct Nearchus along the coast of the Ichthyóphagi; a part of his voyage where he experienced every calamity but adverse winds, and where no commentator has ventured to trace his progress.

III. ICHTHYÓPHAGI.

THIS desolate coast, extending from Malán to Cape Jask, is not less than four hundred and fifty miles in a right line, and nearly six hundred and twenty-five miles, or ten thousand <sup>130</sup>stadia, by the course of the fleet. It is not meant, however, to infer that an hundred and seventy-five miles, the difference between these two numbers, is wholly imputable to the course of the fleet along the shore; for the coast lies generally straight, and the indenture of the bays is not deep. We may suppose that the pressure of famine augmented the efforts of the navigators; while the acquisition of a pilot, and the advantage of the prevailing wind, contributed to lengthen each day's course. We shall find, therefore, that their progress was now sometimes a thousand stadia, or upwards of sixty miles a-day; and as proofs

<sup>130</sup> Strabo says seven thousand four hundred, p. 720. This will be examined more correctly hereafter.



will arise, that they did not always adhere so closely to the shore as in the other parts of their voyage, it may be presumed their means of judging distances were diminished, which caused part of the error in their reckoning; and which error naturally tended to increase their estimation of the measure.

It is necessary to premise these circumstances, because the stadium of d'Anville is less applicable to this coast, exactly in proportion to the difference between four hundred and fifty, and six hundred and twenty-five; and as no such variation occurs in the former part of the voyage, and none so great will occur in the gulph of Persia, it becomes more requisite to point out the causes of variation here; the principal of which are, the distresses that caused distances to appear longer, at the same time that they engaged the mind too much to allow of accurate calculation.

A coast which furnished nothing but fish, which afforded no characteristic distinction to its inhabitants but the name of Fish-eaters, presented no consoling ideas to a body of Greeks, with whom the want of bread was always considered as famine<sup>131</sup>; and though turtle is mentioned as found on this coast by Arrian, and a tribe called Turtle-eaters by Marcian<sup>132</sup> of Heraclea, it is not to be supposed, that because turtle affords a delicious repast in modern estimation, that it was by any means acceptable to a Grecian palate. I rather suspect that *Ichthyophagi* and *Che-lônophagi* stand in the Greek text as appellations bordering on

<sup>131</sup> *Σίτος*, the general term, means bread, as *bread* with us is the general term for food. There are many instances of the Greeks considering the want of bread as famine; and a very particular one in Roman history. At *Aváricum* Cæsar's troops had plenty of meat

but no bread, and this was considered by him as a sufficient reason to offer to his army a proposal for quitting the siege.

<sup>132</sup> Hudson. *Geog. Min. Mar. Herac.* p. 22.

contempt<sup>13</sup>, or at least as intimations of misery; and though I can find no express testimony of antipathy conceived by the Greeks against this species of food, neither can I find any evidence that they made use of it, as is noticed in regard to the shell-fish found in the Port of Alexander and the river A'rabis. We shall have reason to observe as we proceed, that fish is almost the only means of supporting life, or furnishing the conveniences of life, such as they are, to the natives; that their houses are constructed with the larger bones<sup>14</sup> of fish, and thatched with the refuse; that their garments are of fish-skins; that their very bread is a fishy substance, pounded and preserved; and that even the few cattle they have, feed on fish. The same observations occur to modern travellers who have visited this coast. Thevenot, Tavernier, and Niebuhr, seem to comprehend the coast of Persis and Karmánia as under the same circumstances with that of the Ichthyóphagi; and Edward Barbosa, who was pilot on board one of the Portuguese fleets which first visited this coast about the year one thousand five hundred and nineteen, has the following remarkable passage: "They have few ports, little corn or cattle; their country is a low plain and desert; their chief support is fish, of which they take some of a prodigious size; these they salt, partly for their own use and partly for exportation; they eat their fish dry, and give dried fish likewise to their horses and other cattle<sup>15</sup>." So invariable has been the misery of this coast for

<sup>13</sup> The Persians frequently, in speaking of the Arabs who inhabit the desert, call them Moush-kour, Mice-eaters, contemptuously. Mr. H. Jones.

<sup>14</sup> The whale, which we shall hereafter find frequented this coast, might supply ample materials, as we see by the jaw sufficiently com-

mon in England. Shells, or rather large conchs, are mentioned, lib. vi. p. 262, as forming part of these houses, perhaps the roof.

<sup>15</sup> Ramusio, vol. i. p. 295.

At Muscat, on the opposite coast, bruised date stones and the heads and bones of fish are

two thousand years ! and so positive are the assertions of modern voyagers in correspondence with the testimony of Arrian !

The modern name of Mekran appears to be the Persian or Indian appellation for the whole of this coast from the Indus to Kerman or Karmánia, so called in the first instance from its commencement at the Indus or Mehran, and augmented afterwards by the title of Kutch Mekran, from Kidge<sup>16</sup> or Kutch the capital ; distinguished, however, by the more modern division of Bloachee and Brodia, the limit of which is at Guadel : but in the time of Alexander the title of Icthyóphagi was confined to the inhabitants of the coast, while the country within land, from the confines of the Orítæ to Karmánia, was styled Gadrósia, almost equally desolate, and as incapable of supporting an army as the coast.

This country Alexander had evidently entered before the fleet had reached Kókala, as Leonnátus joined Nearchus at that station, having been left behind for that purpose when the main army had advanced into Gadrósia. The difficulties this army experienced are foreign from the present purpose, but the attention Alexander paid to the preservation of the fleet is connected with the voyage ; and a reference to his conduct will tend more effectually to exculpate him from the charge of vanity imputed to him in this part of his expedition, than any other arguments which can be produced.

It is mentioned<sup>17</sup> expressly, that when Alexander entered this province it was his intention to proceed along the coast, to examine what harbours it afforded, to sink wells, and provide

the common food of the cattle. Mr. H. Jones. p. 22. En Kirman, a Kidget-Mecran, & Add to this, the same testimony from Marco Polo. Lib. iii. c. 46. Ed. Bergeron. aux Pays maritimes, but possibly from Couche.

<sup>17</sup> Arrian, lib. vi. 262. Strabo, lib. xv.

<sup>16</sup> Confirmed by Cheref-eddin, tom. iv. 722.

whatever else might afford accommodation for the fleet; but he soon found that, from the nature of the country, this was impracticable. He sent down Thôas, however, with a small body of horse to make observations, which amounted to no more than a confirmation of the misery of the few inhabitants to be found there; and that even water, which was scarce<sup>13</sup>, was brackish also, and obtained only by opening pits in the sand or beach. The army, therefore, was obliged to advance inland; and here the length of the marches to reach water harassed the men and killed the beasts. It happened, however, that at one station he met with a supply of corn, and this, notwithstanding his own wants, he destined for the support of the fleet, fixing his seal upon it, and ordering it to be conveyed down to the coast; but distress prevailed over the fear of punishment; the escort broke the seal, and supported their own lives by the supply entrusted to their charge. Neither did Alexander, knowing their sufferings, think this a time to punish their offence. He made a second attempt by sending down Crêtheus with another supply of no great importance, and a third when he dispatched Téléphus with a small proportion of corn ready ground, having previously directed the natives in the upper provinces to collect dates, sheep, or even salt provisions, if by any means the preservation

<sup>13</sup> When we find in Otter, tom. i. p. 409, no less than five rivers specified in this province, we may be led to think, that more is said of the want of water than is true; but I shall shew hereafter, (see article Cyîza, river Hydriakus,) that two at least of these rivers were salt or brackish, and from the nature of the soil all along the coast, described both by ancients and moderns as salt or nitrous, it

may be presumed that all the waters in the country partook of this quality. Such Arrian represents them here, and such Lieutenant Porter says they are at Sommeany. If the Sommeany river itself were not brackish, the natives would not have cause to open the sands for better, and the water in these openings ceases to rise fresh the second or third day.

of the fleet could be effected. Sixty days<sup>139</sup> did the army struggle with their distresses before they reached Poorā<sup>140</sup>, the capital of this desert; and during one part of their progress so imminent was the danger, from the failure of water and the ignorance of the guides, that had not Alexander put himself at the head of five horse, (all that were capable of service,) and pushed down to the sea-side, where he found water by opening the sands, it is confidently asserted that the whole army must have perished. They proceeded along the coast for seven days, supplied by the same means, till the guides recovered the track, and conducted them safe to Poorā<sup>141</sup>.

There is something in this account which induces us to think that one distress, the want of water, would have been less experienced on the coast than within land; and during these seven days it is probable that Alexander, seeing nothing of his fleet, despaired of its safety; for he could not know that Nearchus had been detained near a month by the monsoon, nor properly calculate the reason of his delay. It is certain that Nearchus found water in the same manner as the king; both were directed by the natives, and several voyagers acquaint us, that wherever palm-trees<sup>142</sup> grow, however arid the soil, there is always water to be found, by opening the ground to the depth of from ten to fifteen feet.

<sup>139</sup> Strabo. Arrian says expressly, from the time they left Ora.

<sup>140</sup> I shall write Poorā, which is the Greek pronunciation.

<sup>141</sup> The present capital of Mekran is Kidge. Cheref-eddin, vol. ii. p. 417. French edition. Poorā, which is the Poreg or Phoreg of the

Nubian Geographer, seems however still a place of some relative importance.

<sup>142</sup> The palm grows in Egypt; and when the Egyptians had poisoned the water in the Kalish of Alexandria, Cæsar opened wells on the coast.

I cannot account for the sixty days attributed to this march through Gadrôsia; the distance through a sandy desert could not be much longer than by sea; and how four hundred and eighty miles<sup>143</sup> should require such a length of time seems a considerable difficulty. Arrian mentions that the marches were protracted to the destruction of numbers; and Strabo specifies that they were two hundred<sup>144</sup>, four hundred, and even six hundred stadia, that is, sometimes as high as thirty-seven miles a-day; a length incredible; and the more the length is increased, the less it agrees with the number of the days.

As no solution of these difficulties occurs, I shall only state the position of the army at Poora and the fleet at Málana, according to the dates given by the historians; and this seems necessary, as we shall have no farther reference to Alexander till Nearchus found him in Karmánia. He had left Pattala a month or six weeks before Nearchus, that is, the latter end of August<sup>145</sup>; what time he continued in the country of the Arabies and Orítæ does not appear, but from a circumstance which occurred in Gadrôsia, and the sixty days employed in that pro-

<sup>143</sup> Four hundred and eighty miles give eight miles a-day; a march not too short in an impracticable country, if it can be made to accord with the other forced marches; and perhaps we ought to compensate the particular length of some days march, with the general difficulties which rendered others short.

<sup>144</sup> There is something unaccountable in Strabo's stadia, for if they are those of d'Anville, two hundred are only twelve miles and an half; no very extraordinary day's march; and if they are the Olympian stadia, six hundred make seventy-five miles; a march which is impossible.

Miles English.	Miles Roman.
200 stadia of d'Anville, 12½	Olympian, 25

Miles English.	Miles Roman.
400 stadia of d'Anville, 25	Olympian, 50
600 ditto, —	37½ Ditto, 75

Tippoo Sultan's ordinary march was four coss; extraordinary, six or seven; stretch of horse, twenty-eight.

If the coss is = 2½ miles,  
 4 = 10 miles,  
 6 = 15 miles,  
 7 = 17½ miles,  
 28 = 70 miles.

But the writer says, they are Sultany coss of four miles; if so, 28 = 112; and yet he says 70 himself. Captain James Achilles Kirkpatrick, An. Reg. 1799, p. 320.

<sup>145</sup> See Anamis, *infra*.

vince, we shall bring him to Poora<sup>146</sup> in the latter end of November; and as Nearchus reached Málana on the twenty-seventh of November, we may conjecture that the seven days' march of Alexander along the coast of the Icthyóphagi, at the western extremity, took place during the very time Nearchus lay at Málana, or had just commenced his course at the eastern limit of the same tribe. I have entered into these particulars in order to connect the motions of the fleet and army, and have no small pleasure in finding that they correspond with each other. Another object was to prove, in opposition to all the historians, that the penetration through the desert was not a mere idle suggestion of vanity, but part of that great design which Alexander had conceived of opening a communication by sea with India: the three attempts which he made in the midst of his own distress to assist the fleet, establish this point as the first object of his mind; and the loss which he suffered fell perhaps chiefly upon the Asiatics, who now composed the bulk of his army, for the Macedonians do not appear to have been weakened, either upon their arrival in Karmánia, or from the transactions in which they were afterwards engaged.

ICTHYO-  
PHAGI.  
BAGASIRA.  
Nov. 28.  
Fifty-eighth  
day.

We left Nearchus at Málana on the twenty-seventh of November, where he staid only that day, and, weighing at night, proceeded thirty-seven miles to Bagasíra<sup>147</sup>. There was a good harbour here, and a village called Pasíra<sup>148</sup>, about four

<sup>146</sup> Otter, tom. i. 408, mentions Kié, or Guié, as the capital of Mekran; but as he makes Kié and Kiz, or Kidaj, two distinct places, and distinct they really are, it is highly probable that he is mistaken, as he disagrees both with the Nubian Geographer, and Cherref-eddin. It should seem that Phoreh is the ancient, and Kidaj the modern capital.

<sup>147</sup> Sehmeider and Gronovius read Bagisára.

<sup>148</sup> De la Rochette places Pasíra to the westward of Cape Arraba instead of the eastward; and his whole distance from the Tomérus to the Cape is reduced to nothing. Has he not mistaken the Jerkumutty creek for the Tomérus? Pasíra is possibly a corruption of Bagasíra.

miles up the country. The site of this station answers to a creek in Porter's chart to the eastward of Cape Arraba, and which, in Mascall's chart, obtains the name of Jerkumutty<sup>149</sup>, but the distance is only fifteen miles. We cannot, however, well be mistaken, because the next day's sail is round Cape Arraba; and as no distance is specified for the doubling of that promontory, the thirty-seven miles applied to the whole are sufficiently correspondent: the text does not justify this allotment, but as the Cape is a fixed point, there is little danger of an error.

Thirteenth station.

Upon the mention of Ba-Gasíra, I must be permitted to notice, that the term Gasira indicates an Arabian navigation on this coast previous to the age of Alexander; for it is neither more or less than Gesira, signifying in Arabic an island or peninsula confessedly, and, as I apprehend, a cape likewise. It is remarkable that, on the coast of the Ichthyóphagi, this term occurs twice, in Ba-Gasíra the first station but one, and Da-Gasíra the last but one. I had hoped to find an opposition of sense in Ba and Da, supposing that Da might signify the *head* of a cape, and Ba the *falling in of the land to form a curve*. Neither Dr. Russel, however, or Mr. Jones<sup>150</sup>, whom I consulted, favoured this conjecture, as supported by Oriental etymology. But Ba occurs repeatedly, as in Balómus, Ba-rna, Ba-dara, Ala-Ba-gíton, Ba-gíá, and Ba-dis; and at almost every one of these places there is a cape, which consequently implies

<sup>149</sup> This chart of Mascall's is not from his own observation, and therefore far from correct. Jerkumutty is ill applied; it belongs to Churmut, the Calametta of the Portuguese, the Kálama of Arrian. From the first view of the two words, who would conceive that Jer-

kumutty and Kálama were related?

<sup>150</sup> Mr. Jones favoured me with two terms in Persic, which, he says, do intimate an opposition of this sort, and would be understood in this sense at Shirauz, or by almost any native Persian.



a bay on one side or the other, and the recurrence of the syllable is a proof that it is significant.

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CAPE  
ARRUBAH.  
ARRABA.  
ARRUBAK.  
Nov. 29.  
Fifty-ninth  
day.  
Fourteenth  
station.

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The fleet weighed from Ba-gasira early in the morning, and stretched out round the cape, which projected far into the sea, and appeared high and bold. After doubling the head, they were obliged to ride at anchor without landing the men, as the surf ran high upon the shore<sup>151</sup>: some of the people, however, were with difficulty landed, in order to procure water; this was effected by opening pits upon the beach, but the quantity was small and bad. Though Arrian has assigned no name to this cape, there is no possibility of a mistake in calling it Cape Arraba, a name which still preserves the title of Arábies, given to the Belootches by Arrian, whose influence, as I have before observed, reaches much farther westward at present than this promontory. The island Karnine<sup>152</sup>, which Arrian places two days' sail from hence, corresponds so precisely with Ashtola<sup>153</sup>, the only island worthy of notice on the coast, that there can be no doubt but that it is identified; and if the island is right, the cape cannot be misplaced.

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KOLTA.  
Nov. 30.  
Sixtieth day.  
Fifteenth  
station.

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The next day's sail was only twelve miles and an half to Kolta; and that of the day following something more than thirty-seven to Kálama<sup>154</sup>.

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KALAMA.  
Dec. 1.

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I have before taken notice that the measures on this coast tend almost regularly to an excess, and the numbers specified

<sup>151</sup> *ἰσχύην*. Petrosium litus, according to the translators.

<sup>152</sup> Schneider reads Canine, from the Florentine MS., p. 144.

<sup>153</sup> Ptolemy has an island in this sea called Asthêa, placed by his longitude indeed oppo-

site to the river A'rabis; but as there is no conspicuous island on the coast except Ashtola, there is every reason to suppose, that, however misplaced, Asthêa has a relation to Ashtola.

<sup>154</sup> Kálama. Kályba. Gron. MS.

between Málana and Kálama prove this. Fourteen hundred stadia produce eighty-seven miles; and if I had added a distance for doubling the cape, the disproportion would have been still greater. In eighty-seven miles there is an excess of twenty-two, for Commodore Robinson's survey gives only sixty-five; and in my account there can be no mistake, unless I have been too desirous to make Málana and Morán the same, which is hardly possible, as the previous measures all correspond. We must impute, therefore, this excess either to the circuitous course round the cape, which seems more than requisite, considering the wind which blew; or to the error of Nearchus's reckoning. I incline to the latter, because I consider the cape and Kálama as fixed points; the former from the circumstances of the navigation, the latter by the mention of an island lying off shore at this point. For I have been enabled to discover the position of Kálama by extraordinary good fortune, and find that the Churmut river of Robinson is synonymous: if this is capable of proof, what latitude ought not to be given to conjectural reconciliations? What credit is not due to Mr. Dalrymple, who recommends the preservation of all names as they stand in authors who have visited the spot? In a Portuguese manuscript of Ressende<sup>155</sup>, in the British Muséum, we have a map of this coast, in which Passaum (Possem) is laid down very well, and the next station on the east, Rio de Kalameta. Kalameta [Kaulmet] is evidently the medium between the Churmut of

Sixty-first  
day.  
Sixteenth  
station.

<sup>155</sup> The Portuguese plundered Guadel and Teis about the year 1578. The natives called Abindos, said to be connected with the Maytagues or Sanganians. Manuel y Faria y Sousa, tom. ii. p. 373. Teis is erroneously placed on the Calamen- by this author; one proof either that it is not our Teis, or that the Portuguese knew little of this coast.

Robinson and the Kálama of Arrian. I consider this station, therefore, as fixed with the utmost precision; and the island Ashtola, or Karníne, mentioned by Arrian as lying off this place, completes the evidence.

That Karníne<sup>156</sup> is the modern Ashtola, there can be no doubt; for though the journal places it about seven miles from the coast, while it is in reality double that distance, this ought not to appear a difficulty, for Nearchus did not visit<sup>157</sup> it. It is visible<sup>158</sup> from Cape Arraba, and perhaps during the whole passage to Kálama; but, in judging distances by the eye, possibly Nearchus was not so skilful as our modern seamen. Lieutenant Porter describes Ashtola as nearly three miles long, with two or three bays on the north side, where turtle may be caught in great abundance: the passage between this and the main is clear; but on the south side there is a rock with foul ground, and overfalls for twelve miles. From the same memoir we have an account of the coast from Cape Arraba, on the east side of which a bay<sup>159</sup> runs in so deep as to make the cape appear like an island<sup>160</sup>, with a smaller one that has shoal-water on the western side. The coast from hence to the westward is very craggy for seven or eight miles, being, as I imagine, the termination of that branch which shoots from the great chain inland, to the sea, forming the boundary between the territory of the Orítæ and Gadrôsia; and the rise to this branch possibly commences at Morán.

<sup>156</sup> Karnina. Kanina. Gron. MS. opt.

<sup>157</sup> Perhaps Nearchus did visit it under the name of Nosala, as will appear hereafter; for it is connected with a story of enchantment; and such a popular error is still current on the coast in regard to Ashtola. Between the As-

thæa of Ptolemy and the Nos-ala of Arrian we find the initial and final syllables of Ashtola.

<sup>158</sup> Lieutenant Porter, p. 4.

<sup>159</sup> It is in that bay I place the anchorage.

<sup>160</sup> An additional reason for its name, Ba-Gasira.

At Kálama, the natives were disposed to be hospitable ; they sent a present of fish on board, and some sheep ; but the very mutton was fishy, as were all the fowls they met with on the coast : neither is this extraordinary, for there was no herbage to be seen ; and the animals, as well as the inhabitants, fed on fish. A few palm trees were observed about the village, but the dates <sup>161</sup> were not in season <sup>162</sup>.

From Kálama they set sail the following day, and, after a course of little more than twelve miles, anchored at Karbis, which is the name of an open shore, with a village called Kysa, about two miles from the sea <sup>163</sup>. The inhabitants fled upon the approach of the ships, and nothing was found in the place but the boats which the wretched fishermen of the coast used, and some goats which they seized and carried on board. Corn they searched for without success, and their own stock <sup>164</sup> was almost exhausted.

The following day they doubled a cape which projected nine miles into the sea, and, after getting round, anchored in a safe harbour called Mosarna.

KARBIS  
COAST.  
Kysa  
VILLAGE.  
Dec. 2.  
Sixty-second  
day.  
Seventeenth  
station.  
KISSA.

<sup>161</sup> There is but little difference in the season of the date becoming ripe, between Bussora and Kálama. At Bussora, the date is ripe in the latter end of August, and the harvest is generally gathered and finished by the end of September. Kálama, in this respect, is probably earlier than Bussora. The green date makes its first appearance at Bussora about the end of February, or the beginning of March. Mr. H. Jones.

<sup>162</sup> *χλωράς* in the text. *Green*.

It is not impossible that the appearance of this fruit may be adduced to determine the season of the voyage ; for those who have been

on this or the neighbouring coasts, cannot be ignorant of the time of year, when the date is green. I know not how to suppose that this can be the case in a northern latitude, however near the tropic, in December ; nor, on the other hand, could I easily abandon all the data, by which I have determined the season of the voyage, from a contradiction of this kind. We learn, in a later part of the voyage, that dates were preserved through the year.

<sup>163</sup> Gron. MS. opt. Kissa.

<sup>164</sup> Probably what they had obtained from Leonnátus.

PASSENCÉ.  
Posmee  
Cape.

MOSARNA  
Harbour.

Dec. 3.  
Sixty-third  
day.

Eighteenth  
station.

No day specified by Arrian, but allowed.

As Mosarna is the station at which the voyage is to assume a new appearance, it becomes necessary to establish the site of it with precision; and in this there would be no difficulty if there were any harbour, bay, or bight within a day's course from Cape Passence. The cape we cannot be mistaken in, as the island of Karníne, or Ashtola, fixes Kálama, and the course from thence; while the projection of Arrian's nameless cape corresponds almost exactly with that assigned to Cape Passence or Posmee by Lieutenant Porter; but there is, in fact, no harbour here, or what might be deemed an harbour<sup>165</sup> even for a Greek fleet, represented in the charts; and Commodore Robinson assured me that the chart of his survey is accurate. If so, modern geography can afford us no assistance, and we must only suppose that, if such a harbour formerly existed, it is now choked up. That there was one can hardly be doubted, for Mosarna is comparatively conspicuous, being mentioned both by Ptolemy and Marcian as the boundary of Karmánia and Gadrósia. Where to fix that boundary inland may be a difficulty; but Arrian, who calls the country inland Gadrósia, and the coast Ichthyóphagi, takes no notice of Karmánia till he comes to Cape Jask. On the contrary, Ptolemy and Marcian consider the whole coast as Karmánia from Mosarna to Cape Jask; and from thence to the river Bágrada in the gulph of Persia. Be this as it may, my present purpose is to shew that Mosarna must be placed at some short distance to the westward of Cape Passence, in consequence of the fleet having doubled the cape that day, and come to an anchor near it in the evening. Arrian

<sup>165</sup> *ἡ λιμὴν ἀκλόστη* is Arrian's expression; it means *land-locked*, or at least so sheltered as to be a quiet harbour.

gives no number of stadia for this day's work, except his mention of the extent of the promontory ; and as we have met with the same omission on the doubling of Cape Irus or Monze, when the fleet anchored immediately in the bay which joins it, we may conclude the same circumstance took place upon the present occasion.

There is a passage in Lieutenant Porter's memoir, which, if I understand it right, confirms the position I assume for Mosarna. " Cape Posmee appears like the top of an old barn in coming from the eastward, but varies according to its different points of view, which I have endeavoured to delineate as exact as possible ; and *from whence* is formed a small bay, at the bottom of which is a small town called according to the name of the cape, chiefly inhabited by fishermen." Now if it is allowable to interpret (*from whence*,) from Cape Posmee, that is to the westward of Posmee; this position would answer exactly ; but it is evident the chart does not authorise this, for the chart places the village of Passence or Posmee eastward of the cape, and in the bay formed by the projection ; and here, if the text of Arrian had not been positive to the contrary, I should have placed Mosarna.

I state the evidence on both sides, and I confess my disappointment in not being able to reconcile the apparent difference, as this village is still a point for the caravans to make from within land ; and the dingies<sup>166</sup>, or vessels of the country, still resort hither for dates, cotton, dried hides, and salt-fish ; a trade which gives a relative importance to the place, conformably to my ancient authorities.

<sup>166</sup> Lieutenant Porter.

At Mosarna, Nearchus found a pilot who undertook to conduct the fleet to the gulph of Persia; he was a native of Gardrôsia, and from the name (Hydrâkes) given him by Arrian, I imagine, an inhabitant of Hydrîakus, a town near the bay of Churbar or Chewabad, which I shall hereafter have occasion to mention. The minute circumstance of meeting with a pilot at this place denotes something more commercial than any thing that has yet occurred on the coast; and Arrian suggests, that from hence to the gulph of Persia the voyage was more practicable, and the stations<sup>167</sup> better known. Upon the acquisition<sup>168</sup> of Hydrâkes, or the Hydrîakan, two circumstances occur, that give a new face to the future course of the voyage; one is, the very great addition to the length of each day's course; and the other, that they generally weighed during the night: the former depending upon the confidence they acquired by having a pilot on board; and the latter, on the nature of the land breeze. I must recur to both these circumstances as soon as the fleet leaves Mosarna; but, at present, I shall take the opportunity of laying down the detail of this coast from Mosarna to Badis, where it ends, by forming a Table from Ptolemy and his copyist Marcian, compared with the order of Arrian's stations, so that the whole of our ancient authorities may be exhibited at one view.

<sup>167</sup> Τὰ δὲ ἀπὸ τούτου ἐκείναι χαλεπὰ ἦν, ἀλλὰ μᾶλλον τι ὀνομαζόμενα, ἢ ἐπὶ τὸν κόλπον τὸν Περσικόν. Which Rook translates: *Less difficult to be passed, though much more famous in story.*

I am not sure that I render ὀνομαζόμενα right, but I apprehend it means, places better known, in opposition to those obscure coasts or villages where they had hitherto landed. *Names more familiar*; at least I have not written nonsense.

Porter bears evidence to the better appearance of the country between Churbar and Jask, p. 9.

<sup>168</sup> We ought to collect from this, perhaps, that the Arabians knew this coast as far as Mosarna well, but had not yet proceeded farther. Hydrâkes had probably sailed with them. So far therefore as they went, the coast was μᾶλλον ὀνομαζόμενα. It is possible also that before the age of Alexander they had reached the coast of Malabar, not by tracking the coast farther than Mosarna, but by standing across from this point with the monsoon.

TABLE for comparing **ARIAN, PROLEMY, and MARCIAN.**

IC TH Y O P H A G I.									
Mosarna is Cape Passenece, Passaum, Posmet.									
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\* Salmasius supposes Kanthapis of Ptolemy to be the Kanatē of Arrian, p. 1200, which he justifies by Kanéatis; but this supposition totally subverts the stadia of both authors.



In this Table I have given the number of stadia as they appear in Arrian and Marcian; but as all Greek numerals are defective, and as I have already partly accounted for the inaccuracy of Nearchus's reckoning on this coast, so I imagine the numerals in Marcian <sup>169</sup> are still less to be depended on, his total rarely agreeing with his particulars, and his order of names not being correct. Equally inaccurate are the longitudes of Ptolemy, and yet, from a comparison of the three, the whole may admit of regulation, and the errors be made mutually to correct each other: of this something more will be said. If I prefer the authority of Arrian, it is not from predilection, but because Nearchus's journal, standing upon each day's work in the order it arose, must be more authentic (if we have a faithful copy of it) than any thing Ptolemy could obtain from the information of others.

The Table commences from Mosarna, and ends at Bombareek, the Karpella of Ptolemy.

It does not appear that any supply was procured for the fleet at Mosarna but water <sup>170</sup>, and perhaps fish; but taking the pilot on board, they weighed anchor in the night, and proceeded forty-seven <sup>171</sup> miles to Balômus. The length of this day's course is such as has not occurred before, and must therefore be imputed to the charge Hydrâkes had taken of the fleet; and we shall find, on some of the following days, their course extended

BALÔMUS.  
Dec. 4.  
Sixty-fourth  
day.  
Not specified, but allowed.

Nineteenth  
station.

<sup>169</sup> Marcian himself acknowledges the great difficulty of giving distances accurately, from a variety of causes, in the proem to his work, well worth consulting.

<sup>170</sup> Καὶ ὕδωρ αὐτοῦ ἐν καὶ ἀλίς ἕκαστος.

And if Passence is Mosarna, Lieutenant Porter's memoir is in perfect correspondence.

Dried fish he specifies as an article of trade; and adds, "Water is to be procured here in the same manner as at Sommeany. Goats also, but very lean, and not reasonable."

The people are Blochees, and very civil.

<sup>171</sup> Seven hundred and fifty stadia.

to even fifty-five or sixty miles; not that it is intended to assert that these measures are correct, but only that their progress was much increased and perhaps their ideas magnified in proportion. The circumstance of their sailing in the night is likewise to be noticed, for though this may have occurred accidentally before, we shall now find it a prevailing practice; and as this is an additional proof of the advantage gained by the acquisition of a pilot, it is important to consider the cause which led to the adoption of this practice.

I know not that I am authorised to say, it is an universal cause, but doubtless it is general, that in every region within the limits of the trade winds or monsoons, a land breeze blows during the night, and a sea breeze during the day. Mr. Marsden, in his *History of Sumatra*<sup>172</sup>, has given a curious and philosophical account of the means by which these effects are produced. With the cause I am not concerned, but the effect is, that, “on the west coast of Sumatra, the sea breeze usually sets in, after an hour or two of calm, about ten in the forenoon, and continues till near six in the evening; about seven, the land breeze comes off, and prevails through the night, till towards eight in the morning, when it gradually dies away”<sup>173</sup>. This is Mr. Marsden’s account; and if his reasoning upon the cause is just, as apparently it is, it must produce the same effect wherever the same circumstances exist; and that this effect takes place upon the coast where we are now employed, is a fact capable of proof.

Captain David Rannie<sup>174</sup> mentions the land breeze upon this coast, as well as those of Malabar and Guzerat; and he adds

<sup>172</sup> From p. 15 to p. 19.

<sup>173</sup> P. 16.

<sup>174</sup> In Mr. Dalrymple’s Collection, p. 87, et seq.

afterwards <sup>175</sup> expressly, "if a land wind blows from these coasts, " either in the night or morning, a ship working along may depend upon a sea breeze, or at least a wind along the coast, " from the north-westward <sup>176</sup>, to carry her in shore again, and " neither is the land or sea breeze ever attended with squalls of " thunder or rain, as the land winds frequently are on every " coast of India."

Here is a collection of circumstances dependant on the invariable course of nature, which throws more light upon the journal we are contemplating than could have been expected to be obtained at the distance of so many ages ; the tranquillity of the sea, the advantage of different breezes, and the security of navigation, all contribute to the accomplishment of this voyage, as a prelude to the communication with India, in vessels of such a sort as must probably have perished on any other coast of equal extent : but there is a peculiarity in this evidence of Captain Rannie, that accounts for a circumstance in the voyage which, without it, would have been inexplicable. We have seen the fleet pass two capes, Arraba and Posmec, with some symptoms of alarm or difficulty, and both noticed in the journal ; but we are now approaching a third at Guadel, which Arrian never mentions. We should reasonably be surprised at this, as the doubling of a cape is always an achievement in the estimation of a Greek navigator ; but having now a native pilot on board who was doubtless acquainted with the nature of the

<sup>175</sup> P. 88.

<sup>176</sup> " Before you come to Cape Guadel, " if the eastern monsoon leave you when you " cross the tropic, your best course is to stand " in for the shore, and so ply it up ; because " there you shall have the land breezes in the

" night, and the sea breezes in the day many " times, and also a current setting to the " westward, until it meet with the current off " the gulph." J. Thornton, in Dalrymple's Collection, p. 66.

winds, it is evident he took advantage of the land breeze to give the fleet an offing, and an head-land was no longer doubled by creeping round the shore to its extreme point. This is clearly the reason why we hear nothing in Arrian of Ptolemy's Alabagium<sup>177</sup>, or Alámbateir, the prominent feature of this coast; the difficulty was surmounted without danger, and therefore passed over without notice. I anticipate this observation as it is connected with the knowledge of the winds, which we have here acquired, and with the skill of Hydrákes, who was now on board.

Balómus is not noticed by Ptolemy or Marcian, nor is their Zorambus mentioned by Arrian; if, therefore, it had stood in the journal posterior to Barna, instead of prior, there would have been little doubt of its correspondence with Zorambus. Even now, there is reason to suppose it the same, from the respective omissions; and if, upon these grounds, it should be thought right to reduce the three to a consistency by an inversion<sup>178</sup> of the order, Nearchus might claim the preference, as his journal is kept from day to day. The resemblance of names would justify the following correction, upon which the preceding Table has been constructed.

<sup>177</sup> From the Arabic article Al in this word, I find fresh proof of an Arabian navigation on this coast; and I am persuaded that Al-abagium and Al-ambateir will be found to have an Arabic etymology.

<sup>178</sup> However bold these transpositions may appear, they are justified by one of the strongest instances possible.

In estimating the Stathmi from Coptos to Berenice.

Peuting. Tabula.	Itinerary.
Coptos,	} Coptos. Phœnico. Didyme. Afrodito.
Phœnice,	
Affroditos,	
Didymos,	
Salm. 1184.	

<i>Ptolemy and Marcian.</i>	<i>Arrian.</i>	<i>Ptolemy and Marcian reduced to Arrian.</i>
Mosarna.	Mosarna.	Mosarna.
—	Balômus.	Zorambus.
Bádara, or Bárada.	Barna.	Bárada.
Zorambus.	Dendróbosa.	Derenóbila.
Kôphas.	Kôphas.	Kôphas.
Derenóbila.	—	—
Alámbateir.	—	<i>Guadel.</i>

The distances are omitted in both ; those of Arrian because they are evidently too large, and those of Marcian because they do not correspond. The real distance by the chart is not more than seventy miles, or, with allowance for the coast, eighty-two ; whereas the particulars of Arrian make the total one hundred and nine, and those of Marcian sixty-two.

Balômus is a village on an open shore, and no day is specified in the journal till they arrived at Dendróbosa. A day is, notwithstanding, allowed to each station which is named, as an error is of less importance on this side than on the other, and may be easily corrected, if the excess is too great, when Nearchus joins the army again in the gulph.

The next station is Barna, twenty-five miles from Balômus, a village only, but recommended by some circumstances of distinction ; for here the inhabitants were found not so utterly savage in their manners and appearance, and some cultivation was observed both of fruit-trees and gardens. The palm is mentioned without any notice of its fruit, and the gardens are described as producing flowers and myrtle<sup>179</sup>, of which they made

—  
BARNÄ.  
Dec. 5.  
Sixty-fifth  
day.  
BARADA.  
BADARA  
of Ptolemy.  
Twentieth  
station.  
—

<sup>179</sup> μύρρα Q?

chaplets<sup>180</sup>; indulging, for the first time perhaps since the voyage commenced, one of their native<sup>180</sup> luxuries.

From Barna the fleet proceeded<sup>181</sup> twelve miles, to Dendrôbosa; and here the ships could not approach the shore, but rode at anchor. This circumstance may induce us to suppose, that the whole course from Mosarna to this place is the course of one night, and to the evening of the following day; if so, it makes thirteen hundred and fifty stadia, or eighty-four miles. Both the distance and the time employed are to be admitted with some reserve, and with this observation, that there must be an excess in the distance, as eighty-two miles would carry us to Alambateir, or Cape Guadel; and Arrian has still four hundred stadia to Kôphas, which precedes it. That the course is only the work of one night and day I am inclined to believe, though I mark it otherwise in the margin, for the reason already given; and this is the more probable, as the fleet is said immediately afterwards to have weighed from hence at midnight.

That Dendrôbosa<sup>182</sup> is the Derenobilla of Ptolemy, and that Ptolemy's order ought to be inverted, receives the sanction of Hudson<sup>183</sup>; who says, he once thought the same. Why he

DENDRÔ-  
BOSA.  
Dec. 6.  
Sixty-sixth  
day.  
Δενδρόβωσα.  
Perhaps DE-  
RENOBILLA  
of Ptolemy.  
Twenty-first  
station.

<sup>180</sup> The pleasure which the Greeks received from wreaths and chaplets in their convivial hours, is too notorious to insist on. The expression, as it stands in the printed copies, is, ἀνθία, ἀφ' ὧν στεφανώματα τῇσι κυμήτησιν ἐπλέκοντο; rendered, *flores è quibus pagane corollas texebant*; but which should rather be, *corolla texebantur paganis innectende*. A piece of gallantry either way, not unlike that of British sailors and Otaheite women. But Gronovius's best MS. reads κύμησι, instead of κυμήτησι, *their own head, not the head of the villagers*.

I am sorry to lose a circumstance which bears so much resemblance to the manners of modern voyagers; but I think the middle verb, ἐπλεκόντο, confirms the reading of Gronovius.

<sup>181</sup> Περιπλώσαντες intimates a cape or projection here; possibly the high land of Darâm mentioned by Lieutenant Porter.

<sup>182</sup> The change of letters in this word is justified by the organs of speech, and exemplified in Τέρη, Greek; Tener, Latin; Tender, English.

<sup>183</sup> Hudson Geog. Min. Marcian, p. 23.

changed his opinion does not appear, but the name differs no more in reality than *Deren-óbosa*, *Deren-óbola*, *Deren-óbila*, and I imagine *Deren*, the constituent part of the name, is still preserved in the *Daram*, or *Duram*, of Lieutenant Porter, who places this as a high land on a part of the coast between *Cape Passence* and *Guadel*, in a situation which would correspond with *Deren-óbosa*; as I conjecture *Shied* and *Muddy Peak* would agree with the other names of *Arrian*, if they had been inserted in *Commodore Robinson's* chart.

KOPHAS.  
KOPHANTA.  
Dec. 7.  
Sixty-  
seventh day.  
Twenty-  
second  
station.

From *Dendróbosa* the fleet weighed at midnight, and reached *Kôphas*<sup>14</sup>, after a passage of twenty-five miles. And here a variety of difficulties arise, which I despair of solving to the satisfaction of the reader. I place *Kôphas* to the eastward of *Alâmbateir*, or *Cape Guadel*, because *Ptolemy*, *Marcian*, and *Arrian*, all concur in the same assertion; but *de la Rochette* carries it to the westward, into the bay formed by the projection of that headland. This can hardly be justified in opposition to all the ancient authority we have, however obscure it may be. This cape is the most conspicuous feature upon the whole coast, and forms the termination eastward of a vast imaginary bay, which *Ptolemy* calls *Paragôn Sinus*, and the author of the *Periplus*, *Terabdôn*. The western extremity they place at *Karpella*<sup>15</sup>, so that if the existence of this bay were established, it would be near three hundred miles across; but it does not exist.

<sup>14</sup> *Ptolemy* appears to use this name as a plural, *Kôphanta*. It occurs but once in *Arrian*, and then without an article; but *Marcian* uses it, *ἀπὸ δὲ Κόφαντος*, which marks *Kôphas* as the right name.

<sup>15</sup> Upon consulting other passages of *Ptolemy*, it does not appear that he uses *κάρως* precisely as a bay. His *κάρως ἀνδράδης*, in the

gulph of *Persia*, is not a bay: but *Francklin*, when at *Mäskat*, uses a peculiar expression—"Cape Rosalgat, which is opposite the *Scindian Gulph*;" apparently giving support to the idea of calling that sea a gulph which lies between the coast of *Arabia* and *Scindy*, in which the entrance into the gulph of *Persia* is disregarded. See *Francklin's Tour*, p. 35.

The coast rises gently, indeed, about half a degree towards the north, during its whole course; and though there are two or three small indentures, there is no general curvature whatsoever. The mistake of Ptolemy (of far less magnitude than his error in regard to the peninsula of India) admits of a solution nearly self-evident; for the fleets from Egypt which sailed with the monsoon from the promontory Syágros in Arabia, if they ever made the coast of Gadrôsia, made it at this cape of Alambateir, as a point of eminence, and left all the coast from Cape Jask on their left out of sight; this naturally raised the idea of a curve inwards, because no land was seen; and if Ptolemy knew any thing of such vessels as sailed from the gulph of Persia, or if any did in reality<sup>166</sup> sail, they also, from the moment they doubled Cape Jask, took advantage of the monsoon, and did not creep along the shore like the fleet of Nearchus, but stood off from one headland to another, and avoided the interruption which the land winds or the nature of the shore presented. It is, therefore, the discovery of Hippalus, the knowledge of the monsoons, which preceded the age of Ptolemy<sup>167</sup>, that gave a different idea of this coast to the mariners of his time, from whose information he drew his plan of this great bay; and it is modern geography alone which has destroyed his curve, and restored the right line of Nearchus. So consistent is truth, and so erroneous is conjecture.

<sup>166</sup> They did sail in a later age, as appears from Cosmas. His friend met them at Ceylon, possibly from Kish.

<sup>167</sup> Ptolemy's longitude of Karpella, 94°, lat. 22° 30'; of Alabagium, 101°, lat. 20° 0'.

But 7° at 69½ miles is 486½ miles; at 54 in lat. 25°, is 378 miles, whereas the real distance is only 264.

378  
264

114 difference.

Again, Ptolemy has 2 degrees between Karpella and Kanthapis, which Marcian estimates at 2000 stadia, by which it should seem Marcian reckoned 500 stadia to a degree.



We shall find, however, that the general arrangement of names in both these authors corresponds; and though it is highly extraordinary that no notice of Cape Guadel occurs in Arrian, still as Ptolemy places Kuíza immediately to the westward of Alámbateir, and Kôphas to the east, we must admit that the Kuíza of Arrian, coming next in succession to Kôphas, naturally concludes Alámbateir between the two, and reconciles both <sup>188</sup> authors happily to each other.

CAPE GUADEL <sup>189</sup>.ALABAGEION <sup>190</sup>. ALÁMBATEIR OF PTOLEMY.

Longitude			Latitude		
by Ptolemy,	-	101 0 0	} Robinson,	20 0 0	
by MacCluer,	-	60 34 0		25 7 0	
add from Ferro,	-	17 40 0		25 4 0	
		<hr/> 78 14 0			
Ptolemy corrected by Gossellin,		72 0 0			

There is some great error <sup>191</sup> in the copies of Ptolemy here, for Kyíza is placed 15' to the east of Alabagíum, although it is to

<sup>188</sup> Marcian, as the copyist of Ptolemy, is always included in this estimate.

<sup>189</sup> Called Guader and Gauden by Purchas, and Mekran Masquerano, vol. i. 495.

<sup>190</sup> The Western point of Guttar Bay is called BAGIA; and the *etymology* of that word would explain ALA-BAGION, in which the Arabic AL is visible. This is Ptolemy's own word. Alámbateir is from Marcian, and the Latin copies; and A'mbateir is not without a relation to Bagíon, if it were discoverable.

Mr. Jones adds, I would venture to offer, till a better is found, الباي كاه Al-pa-e-gah, "The foot of land," otherwise, the low land.

*Quere*, whether Pa does not explain what has been said about Ba and Da? the *head* of the promontory, in contradistinction to the *foot* of the promontory? At Ba-gasíra Arrian has a town named Pa-síra, supposed by d'Anville to be a corruption of Pa-gasíra.

<sup>191</sup> This is capable of proof from Marcian, who writes,

the west of it; and Bagía Prom. in the same longitude with Alabagíum, though it is a whole degree to the west.

The head of Cape Guadel stretches out parallel with the coast like the Pharos of Alexandria, and being joined to the main by a neck of land not half a mile over, makes two bays, one to the eastward and the other on the opposite side; that on the west is larger and more sheltered, with twelve or thirteen fathoms at the entrance, and shoaling to the upper part; the town of Guadel is situated close under the north side of the cape. The bay on the east is small, and not well sheltered, in which, however, we must suppose Kôphas to lie, and possibly near the point marked at its entrance from the east. Mr. Dalrymple has enabled me to present the reader with a plan of this bay, and the soundings will shew, that in whatever part of it we place Kôphas, there is a sufficient depth of water for Greek gallies; possibly, at the favourable time of the year when Nearchus sailed, such shelter as the shore itself afforded was ample security. Between this bay and the other on the western side there is a neck which joins the peninsula to the main, and which has been fortified by a wall<sup>191</sup> with towers. There are still the remains<sup>192</sup> of a town built with stone, but the present inhabitants live in mat houses, and trade, which has been formerly considerable, is now ruined by the miserable state of the country<sup>193</sup>. Water is procured here by opening pits on the beach; goats, sheep, and fowls are likewise to be purchased. These circum-

From Bagía to Kyíza, 250 stadia.  
to Alabagíum, 400

8 | 650  
81 miles.

The real distance is 70 miles.

<sup>191</sup> Possibly a work of the Portuguese, who had a settlement here, if not of more ancient date.

<sup>192</sup> Lieutenant Porter's Memoir.

<sup>193</sup> Hamilton mentions this decline in his time.

stances, insignificant in themselves, are of some consequence to navigators; and induce a probability that conveniences were more attainable here in former ages than at present. Good water is a commodity specified in the journal, which adds, that the place was inhabited by fishermen, who were possessed of small and wretched boats, which they managed with a paddle instead of an oar. The expression is characteristic, for Arrian says, it was like digging the water with a spade; and whoever has seen the New Zealand canoe, in Cook's first voyage, can hardly conceive the idea represented with more precision.

No where have I found more difficulty to render the narrative consistent, than from Mosarna to this place. Mosarna I have fixed by the neighbourhood of Ashtola and Cape Posmee, and Kôphas is, I hope, established by means of Ptolemy, and the position he gives to Alâmbateir; the distances appear incapable of correction; on this head I have confessed my inability to obtain the truth, and must hope for indulgence where the means of information are so deficient.

Two islands are noticed by Ptolemy and Marcian in this neighbourhood; one called Pola, Polla, or Palla, at some distance from the coast, for which I can find nothing equivalent; and another named Libè, Liba, or Zibe, close to Alâmbateir; the latter I conclude to be nothing more than this very peninsula of Guadel before us, which may have been an island "till connected with the main by the increase of the neck of land, or might be considered as such, like the Pharos of Alexandria.

" Seen possibly as an island at sea, from the lowness of the coast.

" The appearance of C. Guadel justifies the idea that it may have been an island at an early period; for the neck of land which

" joins it to the continent is low, narrow, and composed of sand. This observation is also

" applicable to Cape Arubah." Captain Blair.

From Kôphas, in the eastern bay of Guadel, the fleet sailed early <sup>196</sup> in the evening, and, after a course of fifty miles, reached Kuíza, which, by the distance specified, ought to be the Noa Point of Lieutenant Porter, forming the entrance of Guttar Bay from the eastward: but if we are to suppose that the eight hundred stadia, mentioned for this day's work, exceed as much as those of former days, we must place Kuíza <sup>197</sup> on the coast somewhat short of Noa Point; and for this there is a sufficient reason from the next day's course of four hundred stadia, which would be evidently too much for the termination we must allot. Marcian (if his numbers are of any value) places Kuíza at fifty <sup>198</sup> miles from Alámbateir, or Cape Guadel.

A plan of Guttar Bay is given in the general Chart, No. I. and will, by the allowance here made, answer in position to the transactions which are to take place on the following day.

At Kuíza the men could not land, as it was an open shore with a great surf <sup>199</sup>; they therefore took their meal <sup>200</sup> on board at anchor, and then weighing, proceeded upwards of thirty miles to a small city placed on an eminence, at no great distance from the shore.

This nameless city is not without features to distinguish it; for Lieutenant Porter says, though the land round the bay is so

<sup>196</sup> About the first watch; six o'clock. This is the third instance of weighing at night.

<sup>197</sup> See the Table, where it is assumed that Nearchus reckons, between Kuíza and Tálmena, from the extreme points of each bay; that is, from the eastern point of Guttar Bay to the western point of Churbar.

Kuidsa, or Kuisda, as this word would be written in Greek letters, approaches very near

to Khudar; the Oriental orthography for Guttar according to Otter, vol. ii. p. 409.

<sup>198</sup> At eight stadia to a mile, Marcian's numbers agree with Arrian's. Fifty miles.

<sup>199</sup> *παχύν*. If there was a surf, it is an additional reason for placing Kuíza previous to Noa Point.

<sup>200</sup> *ἰδυροπόρο*, is not precise enough to specify an evening meal, but is apparently so.

KYÍZA.  
Dec. 8.  
Sixty-eighth  
day.  
Allowed  
KYEZA.  
Ptolemy.  
Twenty-  
third station.

A SMALL  
CITY.  
Dec. 9.  
Sixty-ninth  
day.  
Twenty-  
fourth  
station.

low, that you can neither see the other side nor the bottom of the bay, from Noa Point; yet there is a hummock or two visible which appear like islands, and one of these hummocks we may assume for the eminence<sup>201</sup> of Arrian upon which this city was situated. "We found," says Lieutenant Porter, "*a small town* at the bottom of the bay, inhabited by fishermen." Is it not a whimsical coincidence, that at the distance of two thousand years, an English navigator should find a town without a name, as well as Nearchus? I do not build upon this; nor do I assert, that the town I am looking for stands where the present town does; this is doubtless Guttar; but I can place Nearchus's town any where in the bay that the position of a hummock will justify, and I rather suppose on the western side, as Lieutenant Porter appears to have viewed the hummocks as he entered the bay from the east.

When the fleet reached this place, it was totally without bread or grain of any kind; and Nearchus, from the appearance of stubble in the neighbourhood, conceived hopes of a supply if he could find means of obtaining it; but he perceived that he could not take the place by assault; and a siege, the situation he was in, rendered impracticable. He concerted matters, therefore, with A'rchias, and ordered him to make a feint of preparing the fleet to sail, while he himself with a single vessel, pretending to be left behind, approached the town in a friendly manner, and was received hospitably by the inhabitants. They came out to receive him upon his landing, and presented him with baked fish, (the first instance of cookery he had yet seen

<sup>201</sup> γλῶσσα.

on the coast,) accompanied with cakes<sup>202</sup> and dates<sup>203</sup>. These he accepted with proper acknowledgments, and informed them he wished for permission to see the town: this request was granted without suspicion; but no sooner had he entered, than he ordered two of his archers to take post at the gate, and then mounting the wall contiguous, with two more and his interpreter, he made the signal for A'rchias, who was now under weigh, to advance. The natives instantly ran to their arms; but Nearchus, having taken an advantageous position, made a momentary defence till A'rchias was close at the gate; when ordering his interpreter to proclaim, that if they wished their city to be preserved from pillage, they must deliver up their corn, and all the provisions which the place afforded, he prepared for the encounter. These terms were not rejected, for the gate was open, and A'rchias ready to enter; he took charge of this post immediately with the force which attended him, and Nearchus sent proper officers to examine such stores as were in the place, promising the inhabitants that, if they acted ingenuously, they should suffer no other injury. Their stores were immediately produced, consisting of a kind of meal<sup>204</sup> or paste made of fish, in great plenty, with a small quantity of wheat and barley. This, however insufficient for his wants, Nearchus

<sup>202</sup> πίματα ὀλίγα.

" These cakes are, I conceive, the very sort of bread made use of to this day all along this coast, and called Aps. They are flat, and baked in a round earthen oven, by being stuck against the sides of it." Mr. H. Jones.

<sup>203</sup> This does not specify the season of the ripe fruit. They might be dried.

<sup>204</sup> This is not more extraordinary than that cattle should eat fish, as mentioned above; or than the Caviar of the Wolga. Lieutenant Porter reports, p. 13, that at Mascat in Arabia they make a mixture of fish and dates with a kind of earth and water, which the cattle eat as their common food, and it is extremely fattening.

See *infra*.

BAGIA.  
FROM.  
Twenty-fifth  
station.

received, and, abstaining from farther oppression, returned on board with his supply. The fleet hauled off to a cape in the neighbourhood called Bagia, and there anchored at no great distance, as I conclude<sup>205</sup>, from the town.

The circumstance of a cape here determines, in my opinion, the correspondence of all particulars relating to this place; for this cape must be the western point of Guttar Bay, and all the circumstances unite in giving a position to this nameless town on the western side of the bay, as I have done.

Lieutenant Porter writes, "The bay<sup>206</sup> is large and deep, with "shoal water, and in crossing right over from Noa Point, "a lump is seen on the opposite shore, with an island nearly "under it, and a little bay called Bucker Bundar<sup>207</sup>, where the "natives fish, and where the Sanganian pirates often lie in wait "for the small vessels that trade along the coast." To this lump I had looked for the eminence on which the town stood, but it is inland, and stands on the high ground behind. I have little doubt, however, that this lump directed Nearchus as the first point seen across the bay, and led him to the town itself. And if it is thought extraordinary that he does not mention a bay here, it is not more so than his omission of Cape Guadel, and it ought to be observed, that when he calls Bagia a cape, a cape necessarily implies an indenture on one side or the other.

From these various deductions I consider this nameless town

<sup>205</sup> No distance is mentioned, and it appears like immediate anchoring, after leaving the town.

<sup>206</sup> Memoir, p. 7.

<sup>207</sup> A relation may be suspected between Bucker and Bagia, Buckah.

Mr. Jones adds, I should suspect Bucker Bundar ought to be written Beker Bundar. The word Beker has a variety of significations, some of which are probable to be given as names to a Bay or Bunder.

and Guttar Bay as identified <sup>208</sup> and I now return to attend the fleet on its progress.

But before I enter upon the remainder of the course from Bagia to Badis, it is necessary to take a general view of the coast, in order to dispose of the intermediate stations which Nearchus, from the distress of the fleet, had little opportunity of describing; and on which, consequently, the scantiness of the journal leaves great obscurity. Kôphas, Alâmbateir, Kuîza, and Bagia, corresponding in the three authors, conduct us safely to this point; and thus far there can be no error, unless I have assumed Bagia for the western point of Guttar Bay instead of the eastern: but the reasons already given are more than sufficient for the occasion.

I am now to take the departure of the fleet from this station of Bagia, and the first step to Tâlmèna is the greatest difficulty; for the distance given by the journal between Bagia and Tâlmèna is a thousand stadia, or sixty-three miles, an estimate which carries Tâlmèna beyond Churbar Bay, and which, if a remedy is sought by commencing the course from Noa Point, encroaches as much on the previous measures as the contrary supposition does upon the subsequent part of the coast. I had, however, originally fixed Tâlmèna at Churbar, Kanasîda at the Tanka, Kanatè at Kalat, Troisi at a creek, and Dagasîra at a headland previous to Mucksa <sup>209</sup>; but by means of fresh inform-

<sup>208</sup> There can be no possibility of error, unless it should be thought worth while to pay attention to the stadia of Marcian. He reckons twenty-five miles from Alambateir to Kuîza, and sixteen from Kuîza to Kasia, *i. e.* Bagia. This would make Bagia and Noa Point the same; and place the nameless town of Arrian

eastward of Noa Point. Even upon this supposition, there can be no greater error than the breadth of the bay; and the numbers of Marcian are too disputable to ground this alteration upon them.

<sup>209</sup> The Chart, No. I. will give all these positions.



ation collected from Otter, I have been induced to alter this arrangement, and abandon the measures of the journal. The following discussion I submit, with some degree of hesitation, to such as may be disposed to examine a question which, though not important, has at least research and novelty to recommend it.

The three <sup>210</sup> following stations in Arrian are Tálmena, Kanasída, and Kanatè; and in the series of Ptolemy there is a Kandriakes, answering to Tálmena; if, therefore, we assume Kandriakes for Tálmena, we obtain three successive names, of which Kan is the initial component part. Now it appears from Otter, that the Oriental accounts which specify the rivers of the Mekran, employ the adjunct Kienk or Kenk, as the Persians use Ab <sup>211</sup> or Roud, to express a river; thus we have Kiourkienk, Nehenk, and Kiechenk <sup>212</sup>, all of which d'Anville has adopted in his map <sup>213</sup> of Mekran, and given them the course assigned by Otter. But this term takes two different appearances in its derivation from the original form, Dsjenk passing, by one process, from Sj into Chienk, Kienk, Kenk, Ken, Kende, and Kande; and, by another, from D into Dienk, Denk, and Danke. In its first form, it is connected possibly with Tchen, Chen; with the Ganga, the Ganges, the Kishen-Gonga, and the Sevi-Gonga of India: in its second, Denk furnishes the Samy-Daké of Ptolemy, which is the Danké or Tanka <sup>214</sup> river of the modern charts on this coast. This term, in

<sup>210</sup> There are four in reality, for a nameless one is placed between Kanasída and Kanatè, which is possibly the modern Godeim.

<sup>211</sup> Ab-Schirin, Ab-Argoun, Roud-chiour.

<sup>212</sup> Chienk, Chenk, pass into Kienk, Kenk, by an Oriental variation, as Kirbe, Girbe,

Jirbe, the skin for water used in caravans, and Chienk, Jienk, into Dienk, Denk, by the same analogy as Jumna into Diamuna.

<sup>213</sup> *Asie première partie.*

<sup>214</sup> Written Tanqua by *Ressende. Portug.* and Tanqua Banqua, the white river.

one or other of these shapes, appears the most ancient expression for a river of any that occurs; and it may be easily shewn that Ptolemy knew of its various orthography and its meaning; for he writes both Samy-Daké and Samy-Kadé, and he interprets Kand-riákes by Hudr-iákes<sup>215</sup>, evidently from ὕδωρ, the Greek term for WATER. Upon consulting Otter, I find a stream in this neighbourhood called Kié-Chek<sup>216</sup>, which may be interpreted the river of Kié or Guié, an inland town at some distance<sup>217</sup> from the coast, and I cannot help thinking that Ptolemy's Kandriákes is a transposition of the same word Kande-Kié, or Kandre-Kié, for Kié-Kande. Otter says, this river falls into the sea between Khudar and Pichin. Pichin<sup>218</sup> is not discoverable, but Khudar is Guttar Bay, which the fleet has now just left, and if Pichin is to the westward, we have the mouth of this river falling into the sea between Guttar and Churbar, corresponding with the Kandriákes of Ptolemy. If it were now possible to identify the Tálmena of Arrian with this Kandriákes, the journal would be clear; but Tálmena has no allusion to a river; it signifies a ruined<sup>219</sup> fort, and that is an

<sup>215</sup> It is extraordinary that the wild geography of Ammianus Marcellinus mentions an Hydriákus in Karmania. Lib. xxiii. p. 462.

<sup>216</sup> It is true that Otter considers Kié-Chek as a fort; and yet he writes, *Le Kiour-Kienk recoit aussi l'eau de Kié-Chek*. Chek is Chenk, or Kienk.

<sup>217</sup> Five days or a week's distance: one hundred or one hundred and twenty miles.

<sup>218</sup> D'Anville gives Pichen a situation such as is required; but I apprehend has only Otter's authority; for I do not find Pichin in Al Edriasi.

<sup>219</sup> Mina, Minau, at the Anamis, and Minavi, at Basra, are expressive of a fort. Tal-

is, in Hebrew, a ruinous heap; and from hence, perhaps, Arabic or Persic. That such ruins were as common on the coast formerly as at present, there can be little doubt; for the Belootches from the eastward, and the native Gadrôsians are both tribes of plunderers. The very next station at Kanasída is noted by the journal as a *ruined city*. Thus has rapine joined with avidity to desolate this coast in all ages. See Parkhurst in voce תלח, Talah; and מען, Massan, an inhabited place; but the last is dubious.

A deity of the Britons, derived, according to Maurice, from the Bramins, is called Tolmen, signifying in the Cornish language a *hole*

object which might occur in one part of the coast as well as another. What remains, then, but to consider the series of both authors, and examine how far they correspond ?

<i>Ptolemy.</i>	<i>Arrian.</i>
Bagia,	Bagia,
Kandriakes,	Tálmena,
Tysa,	Kana-sjda, or Kana-disa,
Samy-Kadè.	Kan-atè.

This is their order, and if the first agrees with the first, and the two last can be discovered to correspond mutually, the second may be considered as the unknown quantity we are searching for. Permit me, then, to read Kana-Disa<sup>220</sup> for Kana-Sida ; and I find Kienk-Disa, the river of Dis, Tiz, or Tidsj. This is the Tysa of Ptolemy, the Tesa or Teisa of Marcian, the Teiz of Dalrymple, and the Tearsa of Porter. All these different modes of writing are expressive of a town situated in the bay of Churbar, celebrated by Al Edrissi<sup>221</sup> for its commerce with Keish, an island in the Gulph, and Oman in Arabia, both sufficiently noticed by Cheref-eddin and other Oriental geographers. Otter brings the Kiour-Kienk, or salt river<sup>222</sup>, into this bay ; and unless Sida shall be found to express *salt*, there can be little doubt but that it is a transposition from Disa

*of stone.* It consists of a large orbicular stone, supported by two others, betwixt which there is a passage. Maurice Ind. Antiq. vol. vi. p. 140. The connection is very dubious.

<sup>220</sup> The licence requested for these transpositions is stated fully hereafter at Agris.

<sup>221</sup> P. 58. Taiz ; a small but populous

city. Est urbs parva, celebris tamen et populosa.

<sup>222</sup> Roud-Chiour the salt river, near Kunk in Laristan ; and Kunk itself is related to Kienk. In those countries where the soil is salt or nitrous, there are salt rivers every where. See Marco Polo in Ramusio, tom. ii. p. 8.

or Diz. By a similar process the modern Tanka may be found in the Kanatè of Arrian, and the Samy-Kadè of Ptolemy; for Kanat and Kadè come by one process from Kienk; and Samy-Daké, Danke and Tanka by another: if, therefore, upon these grounds Kana-Sida corresponds with Tiz or Churbar, and Kanatè with Samy-Kadé or Tanka, Tálmena consequently answers to the Kandriakes of Ptolemy, and the series in both authors is consistent. It is not necessary to insist on this reasoning as indisputable; but if we find the initial Kan thrice repeated in succession, and three rivers locally agreeing with this, and still preserving the traces of the adjunct, it is some light gained in a region of obscurity, and may lead to the just distribution of the stations on the coast, if it should ever be visited again. More rivers than these three<sup>223</sup> I cannot distinguish in Otter<sup>224</sup>; for his Kiourkies and Souringuieur are only the same, or parts of the same stream, Kiour-Kienk; and what their course may be inland is of no consideration to the journal. Otter's authorities, in this respect, are much embarrassed; and I am not without suspicion that he has mistaken Kiè for the capital instead of Kidge: I once thought them both the same; but Al Edrissi writes<sup>225</sup> Kia and Kir as distinct places, and Kir he seems to estimate as the principal city; if so, he writes Kir for Kirge, and Kirge is Kidge. All the geography I am acquainted with makes Kidge the capital of the province, called from hence Kidge or Kutch<sup>226</sup> Mekran in the Ayeen Akbari; and Kedge, Gedge, or Gedrôsia, by the ancient historians: for

<sup>223</sup> There is a fourth, Makeshid, to the west; of which see *infra*. Kutch or Couch signifies mountains, as some authors assert, Kutch Mekran is the low country on the coast below the mountains.

<sup>224</sup> Otter, tom. i. p. 408.

<sup>225</sup> Nub. Geog. p. 56.

<sup>226</sup> It must be allowed, however, that if Sir W. Jones says, Mekran ought to be written Macrán.

Mekran is the country related to the Mehran or Indus; and Kutch Mekran implies the western side of the Indus towards Kutch or Kidge. This is a point, indeed, not necessary to discuss, as it is not connected with the voyage; neither is it insisted on farther than as the suspicion of a mistake.

Having now obtained a probable solution of these difficulties, and found three rivers which may afford the means of reconciling Arrian with Ptolemy, and both with modern geography, it remains to conduct the fleet along the coast to the three following stations of Tálmena, Kanasída, and Kanatè, with a fourth between the two last, which is nameless, and without any distance specified.

TALMENA.  
Dec. 10.  
Seventieth  
day.  
Twenty-  
sixth station.  
KANDRI-  
AKES and  
HUDRIAKES  
of Ptolemy.

The fleet weighed from Bagía at midnight<sup>27</sup>, and proceeded a thousand stadia, sixty-two miles and an half, to Tálmena. This distance, if taken from Noa Point, is not greatly in excess, but this assumption the transactions recorded do not authorise; and there is reason to apprehend that the error of numbers lies somewhere about Guttar Bay, or Kuíza. Whatever it may be, the sinking of it here relieves the remainder of the course to Badis; and we might build something on the four hundred stadia of Marcian to diminish the excess, if we could find their proportion with other stations, which may prove favourable to this supposition. No circumstances relating to Tálmena are recorded in the journal, but that it was a safe harbour; and this, at least, has nothing discordant with the station allotted to it at the mouth of Ptolemy's Kandríakes, the Kié-Kenk (Kié river) of Oriental geography. Nothing in Otter's account forbids the issue of this stream to be fixed between Guttar and

<sup>27</sup> Again at night.

Churbar Bay, and nearer to the latter than the former. We must not pass this place, however, without observing that Hudrákes, the pilot of Nearchus, seems to derive his name from this Hudríakes. It is said expressly that he was a Gadrósian; and if we are right in assuming this stream for the river of Kiè, it is a native of Kiè who is now on board. May we not lament that the brief narrative of the journal has suppressed this circumstance? Or will it afford ground for an argument, that the silence of the journal upon this head furnishes matter against the arrangement? Either way, this must be left to its fate, that we may return to the prosecution of the voyage.

From Tálmena, the distance to Kanasída is estimated at twenty-five miles, a space not greatly in excess; and Kana-Dísa has been interpreted the river at Tiz or Tidsj, which Otter calls the Kiour-Kienk, or salt river. The remembrance of the town still exists in the bay of Churbar, and the cape at the entrance is still called Tizmee, by the same analogy as Cape Passence or Possem<sup>228</sup> is styled Pos-mee: is it not remarkable that two navigators, at the distance of so many centuries as Nearchus and Commodore Robinson, should find the same place in ruins? Nearchus does not mention a river here, and probably did not advance far enough into the bay to see it; but they found a well ready dug, which saved the trouble of opening the sands, and the wild palm tree, from which they took the tender head<sup>229</sup> of the plant to support life; so that the little supply of

KANASIDA,  
OR  
KANA-DISA.  
Dec. 11.  
Seventy-first  
day.  
Twenty-  
seventh  
station.  
TYZA of  
Ptolemy.

<sup>228</sup> Passaum. Portug.

<sup>229</sup> Strabo mentions, p. 722, that the army of Alexander, in passing the desert of Gadrósia, was preserved from famine by the same means. ἀπὸ δὲ τῶν φοινίκων ἦν ἡ σωτηρία, τὸ τι καρπὸν καὶ τὸ ἰγκίφάλον. According to the trans-

lation, Fructus et cerebrum saluti fuerunt. So Xenophon, Anab. lib. ii. c. 3. seems to use ἰγκίφαλος for a part of the fruit: but I think in this passage of Arrian, τέτων τῶς ἰγκίφάλως κόπτορτις, seems to imply cutting the tender head of the plant, rather than the fruit; for

corn they had procured at Guttar Bay could have relieved only a momentary want. The plan of this bay, with its double curve, is given in the Chart, No. I. and I am disappointed in finding no river marked here by our English navigators, in which they agree too well with Nearchus. My authority for bringing the salt river into this bay is Otter, whom d'Anville interprets agreeably to my supposition: but proof is still wanting, and the initial Kana is the only evidence Nearchus affords that the stream exists in this place.

At the time Churbar was visited by Commodore Robinson's little squadron, the natives were desirous of the English settling at 'Tiz, where they shewed him the ruins of a Portuguese fort, and informed him that Churbar had been a place of considerable trade in ghee<sup>220</sup>, silk, twilled cotton, and shawls, till a six years' drought had reduced the land to a desert<sup>221</sup>. Water, however, was easily procured here, and good; with sheep, goats, and vegetables. Their horses also were of a fine breed; and while the English continued in the bay, there were two vessels in the harbour sent by Hyder Ali to take advantage of the market depressed by the drought, and to seek a supply for his cavalry even in this desert region of the Mekran. Such was the attention of that extraordinary man, whose spirit soared as high as Alexander's, and whose conquests might have been as rapid, if,

fruit at this season there could be none. Strabo mentions the preserved date: 'Οι Φαρμακοὶ φυλάττουσι τὸν ἐκείνου καρπὸν ἐν ἑτῇ πλείῃ ταμεινόμενοι. P. 726. But the *lyciophalos*, as Mr. H. Jones informs me, is the tender head of the date tree, commonly called by the Europeans residing at Bussora, the date tree cabbage, which is, and is considered as a delicacy both by them and by the natives. Boiled, he adds, it is much like a fine sweet cabbage. Pickled, it is admirable. I

have often eaten of it in preference to any other vegetable at table.

The top of the palm tree, called the eye, is extremely white, tender, sweet, delicious, and grateful to a miracle. See Relation of the Nile, 1791, p. 102. A palm tree is often cut down for the eye. Ibid. See also p. 107.

<sup>220</sup> Half liquid butter.

<sup>221</sup> Lieutenant Porter, p. 8.

like Alexander, he had met with no opposition but from the native powers of India. The inhabitants of Churbar informed the English, that there was a large and extensive city properly walled round, about a week's journey from the coast. This intelligence agrees well with Otter's site of Kié<sup>22</sup>, and argues something for the river supposed to fall in here, or in the neighbourhood; for in this tract there can hardly be a city unless where there is a river to supply it.

From Kanasída, Nearchus proceeded four-and-twenty hours without intermission to a desert coast, where he was obliged to anchor at some distance from the shore, as the distress of the people was now risen to such a height, that, if he had suffered them to land, he had reason to suspect that they would not have returned on board. This desert shore has neither name or distance, and the day and night allotted to the course, as well as the number of stadia given to Kanatè, the following station, apparently comprehend both the space and time to that place. A day, however, will be allowed here in conformity to the usage I have adopted, but the mesuré will be carried to Kanatè. The point I would assume for this anchorage is Godeim, at the western extremity of the second curve in Churbar Bay. Godeim<sup>23</sup> is a headland very level along the top, with steep cliffs next the sea; from whence Cœlat or Kalat is seen, which is a remarkable object, and somewhat short of which is the mouth of the Tanka Creek. It is observable, that headlands of this kind frequently attract the fleet to an anchorage;

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A DESERT  
SHORE.  
Dec. 12.  
Seventy-  
second day.  
Twenty-  
eighth  
station.

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<sup>22</sup> I am more persuaded that it is the same, by Al Edrissi's giving five days distance from Tiz to Kir, agreeing sufficiently with the week's journey of Porter. Nub. Geog. p. 58.

<sup>23</sup> Lieutenant Porter, p. 9. He says, Godeim looks like an island till you are near it; and d'Anville has an island here. May not this be the Pola of Ptolemy?



but whether for the purpose of surveying the coast before doubling them, or any other reason, does not appear.

—  
KANATÈ.  
Dec. 13.  
Seventy-  
third day.  
Twenty-  
ninth station.  
—

This stream, therefore, naturally corresponds with the Kanatè of the journal; and if Kalat had been at the Tanka, Kanat-è might have been thought not unconnected with it. Seven hundred and fifty stadia, or forty-seven miles, answer almost exactly from the eastern point of Churbar Bay [Kanasída] to the Tanka; and as there is nothing in Arrian to forbid the application of this measure to the two days' course, I shall consider this as a station ascertained. It has already been shewn how the Kanatè of Arrian and the Kadè of Ptolemy are allied, as well as the connection of both with Dakè, the Dankè or Tanka at this place. This connection is verified by the copies of Ptolemy giving Dakè<sup>234</sup> or Kadè indifferently, which is not a various reading, but derived from the fluctuation of Oriental orthography. Whether this will be admitted as proof of the identity I cannot say, but such it appears to me; and on a coast involved in so much obscurity, every approximation to probability is clear gain.

The journal assigns no attributes to Kanatè but that of an open shore, with the mention of some shallow watercourses, intended possibly for the purposes of agriculture, and the bettering of an arid soil. Porter calls the Tanka a small river, and the artificial cuts<sup>235</sup> of Arrian bespeak a river also; for on this coast, wherever there is not a river, no such circumstance could occur. It would be well if this stream could be identified with

<sup>234</sup> Ptolemy, p. 157. Samy-kadè, interp. kadè, Samy-dokhès, noting the fluctuation Samy-dakè, *Samy-daka*. Samy-dokhes river, of Ptolemy.  
interp. *Samy-dakbia*. And so Hudson Mar-  
ciani Perip. p. 22. Samy-dakè, Samy-

<sup>235</sup> Artificial cuts; *διώρυγες βραχίαιαι*. Arrian, p. 343.

any of those specified by Otter; the Nehenk is the one I looked to, but he carries that far to the eastward, and so is he interpreted by d'Anville: his Kiour-kies is that nearest the site of the Tanka, but he joins the Kiour-kies with the Kiour-kienk, and brings them united to Tiz. There is reason to suspect that both are the same; for Kiour-kienk is the salt river, and Kiour-kies is the salt [river] of Kié. We must abandon, therefore, the inland course of these streams for want of information, and content ourselves with the issues we find upon the coast. The mouth of the Tanka in this place is indisputable; for it is the Tanka-Banka<sup>226</sup> of Ressende; and the Portuguese had a fort about three miles up the stream, the ruins of which, with a Bazar and wells, were reported to Lieutenant Porter when he was on the spot with Commodore Robinson<sup>227</sup>. To this river a long course inland is assigned by de la Rochette, on what authority I know not; but it can hardly rise beyond the mountains, as he makes it, if we may judge by the size and shallowness of its mouth.

It does not appear by the journal that the people were suffered to land at Kanatè; neither is there any mention made of a supply<sup>228</sup> being procured. A sufficient reason for concluding, that the course was hurried on faster than the time I have allotted, and for which due allowance will be made.

Upon this ground I assign another day for the passage to Troisi; the course made good was fifty miles; and here, at last, a scanty supply of provisions was obtained. The place pre-

<sup>226</sup> White River? from Bianca Ital. Portug.

<sup>227</sup> Lieutenant Porter, p. 9.

<sup>228</sup> All bread-food was certainly exhausted.

If any thing was on board to support life, it could only be the fish-paste procured near Kyiza.

—  
TROIS.  
TROISI.  
Dec. 14.  
Seventy-  
fourth day.  
Thirtieth  
station.  
—

sented several mean and wretched villages, deserted by the inhabitants upon the approach of the fleet; but a small quantity of corn was found, with some dried <sup>239</sup> dates, and these, with the flesh of seven camels which the natives had not carried off upon their flight, afforded a repast, of which perhaps nothing but the utter distress of the people could have induced them to partake. Whether the Greeks had any particular aversion to camels' flesh <sup>240</sup>, more than what is common to all mankind, who nauseate what they are not used to consider as food, I have not discovered; but it is evident that Nearchus means to give this instance of famine in the extreme, such as we at present understand by the eating of horse-flesh in a besieged town: I feel indeed some concern for the friends with whom I have so long sailed, that I do not hear of their feasting on the turtle with which this coast abounds. Porter mentions the turtle in great abundance at Ashtola; and Marcian fixes a tribe of *Khelônophagi*, or turtle-eaters, in the neighbourhood of the spot, where the fleet now is; but the Greeks seem to have considered men reduced to live wholly upon fish, turtle, or camels, as stamped with barbarism; and the terms expressive of these tribes are used always as indications of contempt or aversion.

I do not here mean to draw a conclusion, but I cannot help noticing it as a remarkable coincidence, that Nearchus should find a supply of dates at this station, and that Porter should say <sup>241</sup>, "Between the Tanka and Mucksa, we found the land

<sup>239</sup> Βαλάνους ἐκ φοινίκων. The copiousness of the Greek language did not supply a term for this fruit. It is literally the acorn of the palm.

<sup>240</sup> Camels' flesh is regularly sold in the mar-

ket at Bussora. I have eaten of it, and I think any one who tastes it will be at a loss to distinguish it from beef. Mr. H. Jones.

<sup>241</sup> Memoir, p. 9.

“ bear a better face than any we had hitherto seen, as the  
“ vallies in most places were full of date trees.” If this does  
not apply to the spot, it is at least descriptive of the coast.

What the name of this station is, or where it is situated, is no  
easy matter to determine ; for Arrian’s usage of the word leads  
properly to no distinction of it in a Greek form. He writes  
Troisin, which, if plural, leaves great room to doubt of its  
origin ; and Gronovius is disposed to read Taoi. In point of  
order, it corresponds with the Pasis of Marcian, which Ptolemy  
writes Masis, Magis, Magida, and Mazinda ; and which Mar-  
cian seems to fix at a river<sup>243</sup> called Sarus and Sálarus : but this  
does not admit of proof, for Ptolemy’s Magis is five-and-thirty  
miles to the eastward of his Sarus. This is of some consequence  
to note, because by these means I may take his Magis previous  
to the cape which I assume for Dagasíra ; and carry his Sarus  
westward to a creek marked in Commodore Robinson’s chart,  
which answers to the Iskim of d’Anville<sup>244</sup>, de la Rochette, and  
Ressende<sup>245</sup>. So far Nearchus corresponds with Ptolemy’s posi-  
tion of Magis, that he intimates no river at Troisi. Upon find-  
ing Makichid mentioned as the name of a river in Mekran, by  
Otter, I thought I had discovered the clue ; for the corruption  
or fluctuation of the text in the three authors would have justi-  
fied any reading in Arrian : but if Otter’s disposition of the  
Makichid is just, it is far to the eastward, and can have no  
relation to the Magida of Ptolemy.

<sup>243</sup> The reason for asserting this is, that  
Marcian gives no distance between Pasis and  
the Sálarus.

<sup>244</sup> Ressende writes Isqui. Isk, Esk, and  
Usk are names of rivers in our own country,  
and all signify water.

<sup>245</sup> It is very ill defined in all.

Out of the uncertainty caused by these various authorities, I can extricate myself only by adhering to the measures of Arrian, which, with allowance for the excess attending the whole of this coast, enable me to place Troisi short of the cape which succeeds first westward of the Tanka, and to fix on that cape for the Dagasíra of Arrian. The reason for this will be assigned hereafter; but I shall first conduct the fleet to Badis, and then take a review of the coast.

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DAGASIRA.  
Dec. 15.  
Seventy-fifth  
day.  
Thirty-first  
station.

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From Troisi to Dagasíra the course was short of nineteen miles. The fleet sailed at day-break<sup>24</sup>; and as this is the first instance since Hydrákes was on board, it may not be improper to observe, that if we fix the hour between six and seven in the morning, the land breeze would hold good for an hour or more to secure an offing. The shortness of the course was determined either by this circumstance, or by another which occurs frequently, the appearance of a cape. This, indeed, is not noticed by Arrian; but Dah-Gesira perhaps expresses the head of a peninsula or promontory, and there are two capes between the Tanka and Mucksa. From the distance between Dagasíra and Badis, I prefer that which is the more eastern. One circumstance only is noticed here, that of meeting with a few straggling natives, from whom it does not appear that any assistance was obtained. Unimportant as this may appear, it preserves a picture of the coast; and the habits of the natives are the same at the distance of twenty centuries. "Every where along the coast," says Porter, "there is a family here and there which

<sup>24</sup> ὑπὸ τῆς ἡμέρας. Sub aurora, before the sun rose.

in the night is mentioned, or the time is omitted altogether.

On all other occasions from Mosarna, sailing

“ keeps a few goats and camels, and subsists upon their milk <sup>246</sup>.” And again, at Mucksa, he adds, “ A few miserable people live on this desolate place on the shell-fish they pick up at low water, without any grain or dates, unless at the time of year they are in season.” Such were the wretched inhabitants Nearchus found here; and Gronovius is almost angry that he honours them with the title of Nomades (herdsmen wandering in search of pasture); he insists upon it, that they are mere vagabonds; but Porter’s camels and goats seem to justify a better sense of the expression. In one view, their misery seems rather upon the increase; for if they are not provident enough to preserve the date, they are sunk below the condition of their ancestors. Strabo mentions the fruit in its dry state, and Nearchus evidently procured dried fruit at Troisi. The inhabitants are called Brodies by Porter; but Niebuhr considers them all as Belootches, quite to Jask <sup>247</sup>, and connects them with the Arabs on the opposite side of the gulph. If this connection could be established, it would not be impossible to extend it through the whole Mekran, and to unite the Arabitæ on the Arabis, with the Arabs of Oman <sup>248</sup>. Neither is it unreasonable to suppose that the Arabic names on the coast are a

<sup>246</sup> Porter, p. 8.

<sup>247</sup> There is a prince of Jask whose romantic history makes a figure in the reign of Abbas the Second. Niebuhr says he was a Balludaj. See Tavernier.

<sup>248</sup> There is an Ommana, mentioned by Ptolemy and Marcian, to the westward of Pasis, (see the Table,) and placed, by the author of the *Periplus*, six days’ sail east from the gulph of Persia. (See *Peripl. Maris Erythræi*, p. 20. Hudson *Geog. Minores*.) The author mentions the connection of this

Ommana with Kana in Arabia, and Barygaza in India, as a kind of central emporium. The place probably did not exist in the time of Nearchus, but seems to owe its rise to the extension of the Arabian commerce towards the east. The name intimates that it was a colony of Arabians from Oman, the immediate province on the west of the gulph, always celebrated for its commercial spirit, and containing Muscat, still the greatest Arabian mart on the ocean. See Niebuhr’s map of Oman.

proof of this ; for as the Arabs were the earliest navigators of the Indian ocean, so were they better qualified to bear the hardships of the desert than any other nation ; and if a life of rapine is characteristic of the Arabians, the Arabîæ or Belootches, in this respect, have in all ages maintained a perfect claim to consanguinity. Sir William Ouseley is the only author who favours this opinion of Niebuhr's ; but the Belootches are in reality a tribe of Aghwans.

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BADIS.  
Two days.  
Dec. 17.  
Seventy-  
seventh day.  
Thirty-third  
station.

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The distress of the people, and the impossibility of procuring a supply at Dagasîra, urged a hasty departure of the fleet. They sailed in the evening, and continuing their course all that night and the following day without intermission, they reached, after a stretch of almost sixty-nine miles, a promontory projecting far out into the sea, with a surf beating upon it to a great extent. This they did not dare to approach, or to double the cape while it was dark. They rode at anchor consequently during the night, as near shore as the surf would permit, and the following morning got round into a bay, where they found the town of Badis, and where they were at last relieved from the miseries they had experienced on this desolate coast. This promontory is the boundary between the country of the Icthuóphagi and Karmánia ; and at Badis they found corn, vines, and fruit-trees of every kind except the olive, a town inhabited, and the inhabitants ready to relieve their wants.

And now having conducted my friends into a place of safety, I must return to survey the coast. The first point necessary to fix is Badis. Badis I place at the cape called Mucksa by Robinson and Porter, and which will presently appear to be the real Jask. The name is written Kan-Theatis, Kan-Thapis, Kan-Eatis, and Kau-Ratis, by Ptolemy and Marcian ; and if

we prefix Kan to the Badis of Arrian, it bears no little resemblance to every one of these variations. Kau-Ratis<sup>249</sup>, in conformity to the other three, is necessarily Kan-Ratis<sup>250</sup>; and this differs so little in the form of the Greek letters, that there is no violence used in supposing that Kan-Batis and Kan-Ratis are the same. Now Kan marks a *river*, and Ba-dis, if my conjectures are right, a *bay*: both these circumstances are applicable to the spot, for there is a river five miles within this cape; and at this river I conclude the fleet anchored on the morning of the eighteenth.

The fluctuating orthography of the Greek text will justify still greater liberties than I have taken; and when it is considered how much the native names of every coast vary in modern charts, how difficult it is to write foreign sounds received by the ear, and how seldom two persons express the same sound by the same letters, there will appear no extraordinary licence in the changes adopted upon the present occasion. I never wish to lay more stress on these conjectural criticisms than they deserve; and if this explication had stood alone, I should think it of little weight; but if it shall be found to accord with the nature of the coast, with the best digestion of the measures attainable, and with the general course of the fleet, even those who set little value upon etymology will allow it to contribute its due share to the mass of evidence which may be procured from other quarters.

<sup>249</sup> Καυράτιδος, in Cod. Herv. Hudson. the mistake is natural. I only go a step farther, and read in Marciani Periplus, p. 22. Καυράτιδος in the text. Marcian, Kaw-Catis for Kaw-ratis; or, in capitals, KAN-BATIZ for KAN-PATIZ.

<sup>250</sup> The difference in Greek letters, between Καυράτις and Κανράτις, is so evanescent, that



In order to fix Badis geographically, it is necessary to encroach on the limits of Karmánia, and to find in the first place what is the Karpella of Ptolemy; for as d'Anville, by conceiving that Karpella and Badis are the same, has confused the account of the ancient historians, so is it a most extraordinary coincidence, that modern charts and modern navigators have varied equally in fixing the proper site of Cape Jask. It happens, that upon the approach to the gulph of Persia there are two capes about twenty-seven miles asunder; the easternmost of which is the Cape Mucksa of Robinson, Porter, &c. and the westernmost their Cape Jask. Here is the origin of that embarrassment which involves the whole question in obscurity, for in reality Mucksa is the true Jask, and their Jask is Cape Bombareek. It is this Bombareek which is the Karpella of Ptolemy, and consequently when d'Anville brings Badis to this point, he fixes it twenty-seven miles farther to the west than it really is.

I shall settle the ancient geography first; I shall then proceed to consider the mistake of the moderns, and give the reasons for pronouncing it an error with so much confidence as I have done.

Ptolemy's series comes down the gulph of Persia to Karpella; and an adherence to his order will give me an opportunity of identifying Karpella with Bombareek to a demonstration. Harmózon is a cape opposite to Mussendon, on the Arabian shore, where is the narrowest part of the streight at the entrance of the gulph; between which and Karpella are two remarkable eminences, one called Stróngylus, or the Round Mountain, by Ptolemy, near Harmózon, and the other Karpella, from

which the promontory derives its name. The former of these is the modern Elbourz, which signifies a fire tower of the Parsees; the latter is the Bombareek rock, which communicates its title to Cape Bombareek, as Karpella did of old. It is true, that Stróngylus is not enumerated in the series, but stands at the foot of the account; its latitude, however, marks its place.

Harmózon,	-	-	23° 40' 0".
Stróngylus,	-	-	23° 0' 0".
Karpella,	-	-	22° 30' 0".

The inaccuracy<sup>231</sup> of these latitudes is of no importance; but let them be true or erroneous, they equally prove that Stróngylus is between the two capes: and as there is not a third, Karpella must be Bombareek. The Bombareek rock is in reality six or seven miles north of the cape, and upwards of two miles from the shore; but as the land is low, it makes a conspicuous figure from *a perforation at its top*, and appears, when the land is not seen, like an island<sup>232</sup>.

Now it is very remarkable that Kar<sup>233</sup>, in Hebrew, signifies *a hole through which the white light appears*; and if I could find the means of ascertaining a similar sense of this word in Arabic, Persic, or Pehlvi, I could shew that Pella might be allied to three<sup>234</sup> Hebrew origins, all expressive of division or separation.

<sup>231</sup> Karpella is really in lat. 25° 42' 30", or 25° 40'.

<sup>232</sup> It is from this deception of mariners that Mr. d'Anville has an island here.

<sup>233</sup> קר, Kar. Also a hole or slit in the lid of a box, for admitting money.

<sup>234</sup> פלא, פלה, Pala, Palah, cut, severed, divided.

פלג, Palag. Applied to the dividing or bounding of countries. See Parkhurst. in voce. All have properly Ph.

This idea would be applicable to the perforation of the rock, and contributes to identify Karpella with Bombareek <sup>255</sup>.

Bombareek is written Combarick <sup>256</sup>, and, as Niebuhr informs us, more properly Cohum-barick <sup>257</sup>, signifying *loose sand* <sup>258</sup>; and such is the nature of the soil from Mucksa all round this angle of the coast to Elbourz <sup>259</sup>, with a range of mountains at no great distance inland. Mucksa and Karpella are both low points, and the latter not easily discoverable at a distance but by the rock, from which it therefore naturally takes its name. If, then, the Karpella of Ptolemy is fully ascertained, I may proceed to shew the fluctuation of the modern accounts in regard to Cape Jask; for the suffrages are nearly equal, whether it is at Karpella or Mucksa. Lieutenant Porter says, Mucksa has been frequently mistaken for Jask; and Commodore Robinson's chart gives the name of Mucksa to the same cape as Porter; but Captain Blair <sup>260</sup>, who was on board the same fleet, mentions that he was on shore at both capes, and that the natives uniformly agreed in calling the eastern cape, Jask, and the

<sup>255</sup> An opportunity is afforded of verifying this meaning, by the same termination applied to a place still more remarkable: Koo-pelè is the *perforated* rock through which the Ganges enters India from the Sewalick mountains at Gang-otri; and Koo-pelè is evidently *rock* or *mountain pierced*.

See Cheref-eddin, vol. iii. B. iv. c. 25.

<sup>256</sup> Combarrack, Gombarrat, Mumbarrack, &c. &c.

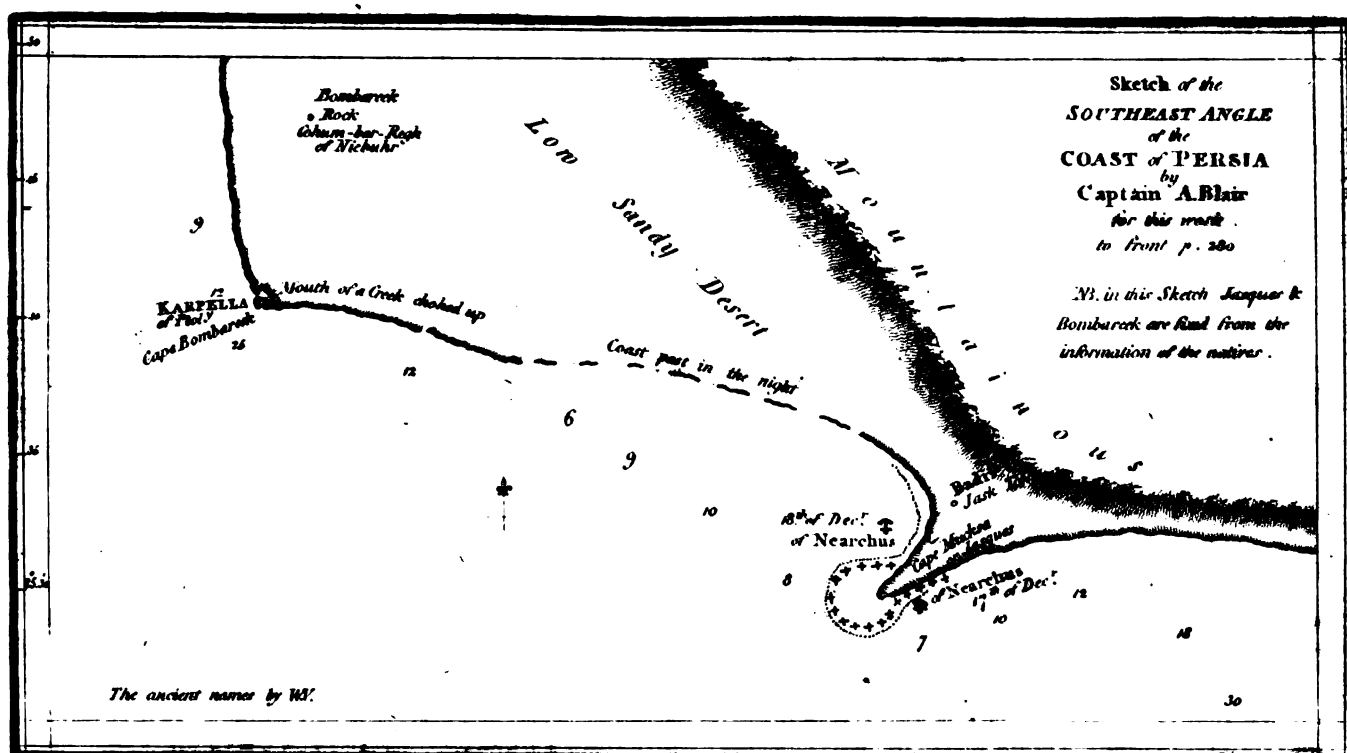
<sup>257</sup> Mr. Jones doubts the propriety of writing Cohum-baregh or bareck, but prefers Cohum-bareck of the two, which may be interpreted a low, flat, or level sand, from bareck *this*.

<sup>258</sup> Pietro della Vallé writes, *Sable delié*.

Rick, or rather Regh, will appear as a component part of Bunder-Regh, Regh-ian, &c.

<sup>259</sup> There are several Elbourz in Persia; one particularly at Yezd.

<sup>260</sup> Niebuhr, if I am not mistaken, agrees with Captain Blair; for he says Kohum-bareck is three three-fourths German miles north-west of Jask: but this is not certain; for his text stands, *à l'est vers le nord*. I read, *à l'ouest vers le nord*, because north-east agrees neither with one Jask or the other, tom. i. p. 72.



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J. Walker sculp<sup>r</sup>.



western, Bombareek : now what is the name of any place but that which the natives give it? Captain Blair, upon a personal interview, favoured me with a variety of circumstances relating to this coast; and, with a liberality that does credit to the officer and navigator, drew up a sketch of the topography, from materials in his possession collected on the spot, which I have caused to be engraved, and inserted in this work. In this sketch, his Cape Jask is the eastern promontory, and his Bombareek the western; and in this he is supported by Cutler and Pietro della Vallé<sup>261</sup>; on whose authority I rely, notwithstanding the evidence on the contrary side is highly respectable.

In the Chart, No. II. is introduced a plan of the bay formed by the eastern cape, from a manuscript of Baffin and Sommer-son preserved in the Bodleian Library, and published by Mr. Dalrymple. In this plan the town of Jask is given, and a river<sup>262</sup> five miles from the cape, near which I suppose Nearchus to have anchored, and upon which the town of Badis possibly stood in that age. This chart, it is true, does not style the eastern cape, Jask; but it calls the bay, Jask Road: the town,

<sup>261</sup> Nous doublâmes le cap, qu'ils appellent en Persan Combarick, c'est à dire, *sable delié*, et la nuit suivante nous laissâmes derriere nous, la pointe de Giask. Piet. della Vallé, tom. vi. p. 251.

This language manifestly marks the same Combarick and the same Jask as Captain Blair's; and Pietro della Vallé is the best of evidence, as he was in the neighbourhood of Ormuz during the siege, and makes frequent mention of the English fleet in Jask road.

<sup>262</sup> "To the northward of Cape Jasques comes in a river, distant about five miles. Any vessel, not drawing above ten or eleven

feet, may run into it as a good haven. It is as secure as a wet dock." N. Cutler's coasting pilot in Dalrymple's Collection of Memoirs, p. 83. See, in the same Collection, J. Thornton, p. 69. Both copy a note of John Hatch, master of the Bee, affixed to Baffin's plan. The river is marked in the copy of that Chart engraved in No. II. with the town of Jask to the north. I suppose Nearchus to have anchored near the mouth of the river, and nothing forbids the existence of a town on that stream two thousand years ago.

"considerable way into the sea." These, as nearly as I can render them, are the very words of Arrian, and a single glance at the Jask of Captain Blair's sketch seems now to determine the question past contradiction. The extent of the surf naturally implies the extent of the projection; and if extent is not the peculiar feature of Jask, in opposition to Bombareek, there is no truth either in the plan of Baffin or the sketch of Blair: add breakers to this projection, and the picture is complete. But we may advance one step farther still, for Arrian says expressly, that from this cape the course was no longer west, but north-west. This is true of Jask, but not of Bombareek; for from Bombareek the course would be almost due north. Let us hear modern authority upon this point. Cutler, in his Coasting Pilot, fixes the same points for Jask and Bombareek as Captain Blair; and he asserts<sup>266</sup>, that "from Guadel to Jask the coast lies west by north, and east by south;" but "from the point of Jask to the low point of Bombareek the course is north-west."

These are the grounds upon which I venture to assert, that d'Anville is mistaken at the commencement of his discourse; but it is an error arising, not from want of research or discernment, but from the materials<sup>267</sup> he had to work upon; and from

has brought it from eight miles distance, and then it is not in the sea, but on a sandy plain near three miles from the shore.

I render *ῥαχίς*, surf; and there can be no error in my construction greater than this. It is either the surf itself, that is, the breach of the water, or else the shoal or breakers on which it beats. The latter is the better sense of the two. See an anonymous author quoted by Vossius ad Melan, p. 412. Var. Ed. Lugd. Bat. 1732.

καὶ τὰς ῥαχίς μετὰ τὴν ἀναχώρησιν ἀναζητήσαντες.

Hesychius: ῥαχία πᾶς πετρώδης αἰγιαλός.

Suidas exponit, ῥαχίαν, τὴν ἀκτὴν καὶ τὸν τόπον αὐτὸν ᾧ προσαράττει τὸ κύμα. Bochart Phaleg. 687.

<sup>266</sup> P. 69 and 70, in Mr. Dalrymple's Collection. He writes Jasques and Combarick.

<sup>267</sup> The Neptune Orientale.

a false confidence common to too many of his countrymen, who place their trust in translators, instead of referring to the original text. The attention paid to this station of Badis will not be deemed superfluous, when it is considered that the geography of Ptolemy and Arrian is thus rendered consistent, and the true limit of Karmánia fixed. Neither will the modern navigator be displeased to obtain the true Cape Jask, which, if native information be the best, is fixed immutably by Captain Blair. It is no ordinary pleasure to have my own doubts satisfied; for, having originally assumed Mucksa for Badis, I had afterwards changed the arrangement in deference to d'Anville. I now revert to my first opinion<sup>268</sup>, upon the authority here produced; and I know not of any one suggestion to the contrary, except that Badis and Bareek bear a distant resemblance.

The precision which has been attained by these inquiries will enable me now to reduce two previous stations to probability, which were passed in haste; for Dagasíra falls in, by the measures of Arrian<sup>269</sup>, with the first cape west of the Tanka, and Troisi must of course be about eighteen or twenty miles eastward of Dagasíra. But the whole is a tract of the greatest obscurity. The same must be confessed of Ptolemy's Rhógana and O'mmana<sup>270</sup>. The journal, indeed, is not concerned with them; but I would wish to assign them a site, though it is not easy to discover one, unless they lie between the two capes east of the

<sup>268</sup> In consequence of this fluctuation, this part of the narrative has been reviewed and written three times over.

<sup>269</sup> Eleven hundred stadia, nearly sixty-nine miles.

<sup>270</sup> O'mmana is apparently derived from the Arabs of Oman, who had extended themselves to this coast. See *Peripl. Mar. Erythr.*

Rhógana is the same name as Arrian applies to Bundareck, or Bender Rheg, the Sandy Port. It alludes to *sand* here likewise without doubt. Both names are Arabic, and bespeak Arabs on this coast, if not Arab settlements in the interval between the time of Nearchus and Ptolemy.



Tanka, and then the Agris<sup>71</sup> of Ptolemy interferes with the disposition. I shall add but one particular more, as a general confirmation of the arrangement I have adopted, and submit the whole to the judgment of the reader. It is this:—The rivers of my ancient authorities are all found upon the modern charts; if therefore, an individual position should be wrong, the general delineation is nevertheless right; and I add, upon the comparison it will prove that Kan is equivalent to Kienk, and that both indisputably mark a river.

Kan-driakes, - the Kie-Kienk, between Guttar and Churbar.  
 Kana-disa, - the river at Tiz.  
 Kana-Tè, - the Tanka.  
 Sarus, - the Isqui, or Iskim.  
 Kan-Ratis, or Batis, the river at Badis, or Jask.

<sup>71</sup> The Agris of Ptolemy is written Agri-sa, as Hudson informs us, by the old interpreter of that author; and Agrisa it appears in Marcian. In the Table I have ventured to form, Agaris, and then transpose the syllables so as to extract Agasira or Dagasira from it. If the reader should doubt the propriety of these transpositions, I must observe that the corruption is not merely European, but Oriental also. Gezira is a town of some note on the Tigris, near Merdin, and takes its name from being surrounded on three sides by a winding of the river. Dr. Howel, who came by this route from Basra to Constantinople, says, the natives call it Jesseera or Geraza. (See his Journal 1788, p. 79.) If he had written both words, as he ought to have done, with the same letters transposed, we should have had the very transposition from the natives for which I contend:—Gerisa, Gesira; Jesseera, Jereessa. The errors which arise between the eye, the ear, and the mouth, in hearing,

writing, and pronouncing, are beyond calculation, besides those which proceed from ignorance. Two instances are before me which may cause the reader to smile. The English translator of Bernier's Travels makes the French physician say, that he was hospitably entertained by the English at Calcutta, who treated him with an excellent liquor called *Bouleponge*. The translator never once suspected that his countrymen made a *bowl of punch*.

A second occurs in Pietro della Vallé. His French translator says, he embarked in an English ship at Gomroon, called the *Vubali*. This strange word is nothing more than the *Whale*. But the Frenchman, having no w in his own language, wrote two u's, or rather Vu, and then turned an Italic *b* into a *b*: thus *Whale* became *Vubali*. Etymologists are often ridiculed; but I claim no small share of credit for the resolution of this difficulty.

The Whale, — Woodcock commander,

These five streams appear in Arrian, Marcian, and Ptolemy, and five only, without addition, on the modern charts; four of them occur with the adjunct Kan. Is it arrogance to say that this amounts to demonstration?

At Badis is the boundary between Karmánia and the desolate coast of the Icthuóphagi; and at this limit I must pause, to consider the sum of Arrian's measures, and to compare them with the actual extent of the coast. This labour indeed is shortened by the Table already given from Mosarna, comprehending seven thousand four hundred stadia out of the ten thousand which form Arrian's total between Málana and Badis; but this total, like many others, differs from its particulars, for the numbers from Málana to Mosarna stand thus:

			Stadia.
To Bagasíra,	-	-	600
To Kolta,	-	-	200
To Kálama,	-	-	600
To Kuíza,	-	-	200
To Mosarna,	-	-	150
			Rook <sup>272</sup> , 400.
			<hr/> 1750
			250 from Rook.
			<hr/> 2000
			7400 to Badis.
			<hr/> 9400

is mentioned also by Purchas, vol. iii. p. 1789, 1790. See Sir Thomas Herbert's Travels, p. 110, who informs us this Whale was lost just after the surrender of Ormus.

<sup>272</sup> Rook's addition is fair; for one hun-

dred and fifty stadia : - assigned to the cape alone; but I observe, where a cape is marked and no distance afterwards given, the fleet appears to anchor as soon as it is round. See Eirus.

To this sum Rook adds six hundred <sup>73</sup> stadia, for a distance omitted between Kanasída and Kanatè, to make up the ten thousand of Arrian. These six hundred I have omitted, from the pressure of numbers too high on that part of the coast, and comprehended the whole two days' course in the seven hundred and fifty stadia to Kanatè. Nothing, however, is gained by this; for though it eases the measure on the coast, it still disagrees with the total. It is not a little remarkable, that Strabo's <sup>74</sup> measure of the whole coast should be the precise sum that Arrian reckons from Mosarna, seven thousand four hundred; and as Marcian and Ptolemy extend the limits of Karmánia to Mosarna, if I had found the same number in Marcian, I should have concluded Strabo had been misled by some boundary of the same kind: but Marcian's total from Badis to Mosarna is four thousand six hundred, and from Karpella one thousand more. I shall produce a reason likewise presently, why I think Marcian reckoned by a different stadium: but let us first observe, that by Arrian's total,

10,000 stadia produce	—	625 British miles,
Strabo's 7,000	—	462½
Commodore Robinson's chart,	—	480 <sup>75</sup>
		—————
		625
		480
		—————

so that the excess upon the whole coast, by Arrian's numbers, is 145 miles, and Strabo's comes much nearer to the truth. It is not

<sup>73</sup> By an error of the press, it appears nine hundred.

<sup>74</sup> Gervinus disputes Cassin's statement of Strabo's sum. *Ann.* p. 321.

<sup>75</sup> The four hundred and eighty miles are

continued here, to correspond with the same number in Book I. Art. Stadium: but an error was there noticed, arising from the estimation of a degree of longitude in latitude 25, and there is a second error to be acknow-

possible to account for Arrian's excess by the sinuosity of the coast; for no shore of equal extent has fewer curves: but if the excess cannot be justified, it justifies the system I have adopted all along this tract of the Icthuóphagi, of shortening all his measures where the nature of the course or character of the coast required it. It is not just to charge Nearchus with a design of lengthening this navigation, in order to enhance the difficulty or the danger: but distress and famine make every passage appear longer than it is, as mariners assure me; and when the fleet under the guidance of Hydrákes kept at a farther distance from shore than Greek pilots would have dared, it is probable that measures were ascertained with less correctness, or inflamed by conjecture. Marcian, in the proem to his work, has fully stated the difficulty of obtaining correct distances by means of itineraries and journals; some measure by a right line, some by the curvature of the coast, and all in general exceed the truth. That this, therefore, should take place in the narrative before us, will not appear extraordinary to those who know that the length of the Mediterranean was estimated by the longitudes of Ptolemy till the last century, and that it was curtailed of near twenty-five degrees by observation<sup>276</sup>, no farther back than the reign of Lewis XIV.

ledged here; for the former measure was taken to Karpella, twenty-seven miles west of Jask, as I did not at that time know the real distinction between these capes. After due allowance made for both these errors, and some considerations of smaller moment, there is still room for farther discussion, if I had not already dwelt on these minute particulars too long.

<sup>276</sup> Mercator's map in Ptolemy gives the Mediterranean near 65°; d'Anville's little

more than 40°.

Scanderoon, Alexandria, and Constantinople were determined by Mr. Chazelles, about the year one thousand six hundred and ninety-three, sent up the Levant for that purpose. The meridian of Paris to the Straits of Gibraltar, about one thousand seven hundred and twenty. Some doubt still remains between Gibraltar and Algiers. Blair's *Rise and Prog. of Geog.* p. 154.

The general excess of Ptolemy is too well known to require a comment here; but the effect of it upon this coast will explain the estimates of Marcian upon a principle that has never been noticed hitherto by geographers. Ptolemy<sup>277</sup> places Karpella in longitude<sup>278</sup>  $94^{\circ}$ , and Mosarna  $103^{\circ} 15'$ ; the interval is consequently  $9^{\circ} 15'$  of longitude; and, upon the same interval, Marcian reckons five thousand six hundred stadia, which brings his estimate to six hundred and twenty-two stadia for a degree of Ptolemy's. Let us then advert to the common calculation of the Greeks, six hundred stadia<sup>279</sup> to a degree, and we immediately discover, that Marcian's stadium approaches the Olympian, of eight to a Roman mile, and not the stadium of Arrian, which is nearly fifteen to the same measure. In order to apply this estimate then to the case before us, let us next take the measures between Mosarna and Badis. The stadia<sup>280</sup> of Arrian are seven thousand four hundred upon this interval, and those of Marcian four thousand six hundred: but as Arrian's stadia are fifteen to a mile Roman, they produce four hundred and ninety-two<sup>281</sup> miles Roman; and as Marcian's are eight to the same measure, they give five hundred and seventy-five miles Roman. From this deduction, therefore, it is manifest that the estimation of the coast by Marcian is more in excess than Arrian's statement; and upon repetition of this ex-

<sup>277</sup> See *supra*.

<sup>278</sup> In latitude  $25^{\circ}$ , which is the medium of this course, a degree of longitude contains in reality but fifty-four one-half geographical miles; and upon this, some farther inquiries might be grounded: but the object here is only to obtain a general deduction, and the reasoning, as far as I am a judge, is conclusive: but I refer it with great deference to professed geometers.

<sup>279</sup> D'Anville reckons six hundred, Gossellin seven hundred, for a degree of a great circle: the ordinary and usual estimate is six hundred and twenty.

<sup>280</sup> According to Ptolemy's estimation of a degree of a great circle,  $9^{\circ} 15'$  upon the parallel of  $25^{\circ}$  of latitude should make a distance of 4192.64 Olympic stadia. Bishop Horsley.

<sup>281</sup> Equal to four hundred and sixty-two miles English. The fractions are omitted.

periment upon the whole extent from Karpella to the Indus, I had the satisfaction to find that the issue was nearly the same.

By this method, if I cannot reconcile Arrian's calculation to truth, I at least account for his error; and I shew that his error is less than that of other ancient geographers. Even in his error, I find the means of elucidating his narrative; for there is little reason to object to the position of the stations in the order they appear, but the discordance of the measures. This discordance affects, in reality, only one place upon which there remains any just reason to doubt; that is, Troisi. If this be carried to the Sarus, Dagasíra must be fixed at the second cape westward of the Tanka, instead of the first; and this encroaches as much on the measures between that cape and Badis, as the contrary supposition does on the distance between the Tanka and the first cape. Working as I have done upon scanty materials, I trust that merit will rather be imputable, for the service performed, than blame incurred, for the degree of obscurity which remains<sup>22</sup>. Some obscurity must remain upon all nautical measurements; and if modern navigators, with the assistance of instruments which divide to a second, still differ in their observations; what allowance ought not to be made to the ancient discoverers, who had only the eye and the hand to direct them, and who consequently drew the best of their conclusions from conjecture?

The time employed on the coast of the Icthuóphagi is twenty-one days, according to the account in the margin, which reduces

<sup>22</sup> Φημί δὲ ὅτι ἐν ᾧπασιν τοῖς τῆς θαλάττης μέτροις ῥάδιον ἴσκει τὸν τῶν σταδίων ἀριθμὸν πρὸς τὸ ἀκριβέστατον ἀντιγεῖν. It is no easy matter to determine accurately the number of stadia upon any coast. Marçian Heracl. p. 3.

each day's course to an average of twenty-two miles on the real measure, and twenty-nine upon the measures of Arrian. The estimate of time may be corrected, when the fleet opens a communication with the army in Karmánia. The allowance, therefore, of a day upon some particular intervals, where there was no evidence in the journal, cannot materially affect the correctness of the account. As the fleet sailed with a pilot on board, and with the advantage of the monsoon, more days may have been allowed than necessary, and less extent given to the average of each day's course; but there are data to correct the statement, which will be produced on the arrival of the fleet at the A'naniis.

The manners<sup>23</sup> of the wretched inhabitants have, occasionally, been already noticed; but Nearchus dwells upon some farther particulars, which, from their conformity with modern information, are worthy of remark. Their ordinary support is fish, as the name of Icthuóphagi, or fish-eaters, implies; but why they are for this reason specified as a separate tribe from the Gadrôsiens, who live inland, does not appear. Ptolemy considers all this coast as Karmánia, quite to Mosarna; and whether Gadrôsia be a part of that province, or a province itself, is no matter of importance: but the coast must have received the name Nearchus gives it from Nearchus himself, for it is Greek, and he is the first Greek who explored it. It may perhaps be a translation of a native name; and such translations the Greeks indulged in, sometimes to the prejudice of geography<sup>24</sup>. But these people, though they live on fish, are few of them fishermen; for their barks are few, and those few very mean and un-

<sup>23</sup> See Diod. lib. iii. p. 188, et seq.

<sup>24</sup> Heliópolis in Syria, Polutimétus a river

in Sogdiana, Hecatómpulon in Parthia, &c. &c. are all instances of this practice.

fit for the service. The fish they obtain, they owe to the flux and reflux of the tide; for they extend a net<sup>285</sup> upon the shore, supported by stakes of more than two hundred yards in length; within which, at the tide of ebb, the fish<sup>286</sup> are confined, and settle in the pits or inequalities of the sand, either made for this purpose or accidental. The greater quantity consists of small fish; but many large ones are also caught, which they search for in the pits, and extract with nets. Their nets are composed of the bark or fibres of the palm, which they twine into a cord, and form like the nets<sup>287</sup> of other countries. The fish is generally eaten raw, just as it is taken out of the water, at least such as is small and penetrable; but the larger sort, and those of more solid texture, they expose to the sun, and pound<sup>288</sup> them to a paste for store: this they use instead of meal<sup>289</sup> or bread, or form.

<sup>285</sup> Those who are acquainted with the coast of Kent will recollect a similar practice in Sandwich Bay, called Pegwell Bay from this circumstance, where the nets are of much greater extent; Arrian says two stadia (equal perhaps to two hundred and eight yards English), meaning to express a great length. I am aware that the expression may be judged to interfere with the small stadium of d'Anville, but every thing is small or great by comparison; and if the ordinary Greek net was less than two hundred yards, this is consequently large.

<sup>286</sup> Diodorus from Agatharcides varies somewhat in the account, p. 184.

<sup>287</sup> The use of the net was found, I think, in every island of the South Sea visited by Captain Cook, and on every coast except New Holland. Specimens of the natives' skill in the art of net-making are found in the British Museum. This, among other endowments, tends to prove them of a superior origin to the Blacks of New Holland or New

Guinea; they are probably Malây, as the vocabularies of their language seem to prove.

<sup>288</sup> καταλῆντες, rendered by Vulcanius, *Majoris vero durioresque ad solem torrentes simul ac penitus tosti fuerint molentes in farinam redigunt*; that is, they grind them and make a paste or caviar of them. Gronovius objects to *grinding* them, as they have no mills. He proposes to read καταβλῶντες, *pounding*, or κατακλῶντες, *breaking small*; both which manners of preparation are justified, by Strabo's mention of mortars made of the vertebræ of the whale, and the paste or meal noticed by Arrian: and καταλῆντες, *grinding*, may be thought not to depart from its proper sense, if we consider the people spoken of, though they had no mills. The same kind of paste is made to the present day on this coast, on the coast of Arabia, and in the gulph of Persia.

<sup>289</sup> Biscuit de poisson sec, as M. Polo calls it in Bergeron. Tom. ii. 159.



them into a sort of cakes<sup>290</sup> or frumenty. The very cattle live on dried fish, for there is neither grass nor pasture on the coast. Oysters, crabs, and shell-fish are caught in plenty; and though this circumstance is specified twice only in the early part of the voyage, there is little doubt but that these formed the principal support of the people during their navigation. Salt is here the production of nature; by which we are to understand, that the power of the sun in this latitude is sufficient for exhalation and chrystallization without the additional aid of fire; and from this salt they formed an extract<sup>291</sup> which they used as the Greeks use oil<sup>292</sup>. The country, for the most part, is so desolate<sup>293</sup>, that the natives have no addition to their fish, but dates: in some few places a small quantity of grain is sown; and there, bread is their viand of luxury, and fish<sup>294</sup> stands in the rank of bread. The generality of the people live in cabins, small<sup>295</sup>, and

<sup>290</sup> *Μαζας*, *Polenta*, a thin cake or paste of meal, still used in Italy by the name of *Polenta*, according to Barretti. (Letters to S. Sharp.) The ancient *Polenta* was sometimes not a solid.

<sup>291</sup> *ἔλαιον*, oil. But how oil from salt? says Rooke. Read *ἔλαιαι* for *ἄλεις*; for what else is oil made from but olives? If olives were found upon this coast, the reading might be just; but olive oil was such a luxury to the Greeks, that if a single tree had appeared on the coast, Nearchus would not have omitted the mention of it. He affirms the direct contrary.

<sup>292</sup> Schneider supposes something omitted here, perhaps the mention of some fish, from the blubber of which they obtained an oil. P. 159. This conjecture is very rational.

<sup>293</sup> "There is a coarse grass on several parts of the coast on which the camels feed, and the seed of the same grass is used by their

keepers for bread. A party, consisting of two men and two women, which I visited, tending a herd of camels, who lived in miserable tents, had no other provision except this grass seed, and small fish, which had been driven on shore by the surf, and dried by the sun. They probably also might use camels' milk. . . . I do not remember to have seen any whales on the coast, or bones of those animals forming any part of their houses." Captain Blair.

Captain Blair's evidence proves that the present inhabitants are more miserable at this day than in the time of Nearchus. Their habitation is worse, and their method of procuring fish for food far more precarious.

<sup>294</sup> Very delicately expressed by Diodorus: *ὡς ἀνὰ τὸ Ποσειδῶνος τὸ τῆς Δήμητρος ἔργον μετεπιφύετο*. Lib. iii. p. 185.

<sup>295</sup> *Ἐν καλύψαις σπηλαιαῖς*. See Ar. 335.

stifling; the better sort only have houses constructed with the bones of whales; for whales are frequently thrown<sup>296</sup> up on the coast, and when the flesh is rotted off they take the bones, making planks<sup>297</sup> and doors of such as are flat, and beams or rafters<sup>298</sup> of the ribs or jaw-bones: and many of these monsters are found fifty yards in length. Strabo confirms this report of Arrian; and adds, that the vertebræ or socket-bones of the back are formed into mortars, in which they pound their fish, and mix it up into a paste, with the addition of a little meal.

To this scanty list of provisions our modern voyagers add little. Barbosa, Thevenot, Tavernier, and Niebuhr, all mention fish on this coast as still the food of the natives, and from hence all up the eastern shore of the gulph of Persia; to which Lieutenant Porter adds a few goats and sheep, neither cheap or good; and once only he mentions vegetables at Churbar, which were good but very scarce. Whether camels are usually eaten on this coast, as they are in Arabia, is not ascertained; those which Nearchus procured at Troisi he seems to have employed, as the inhabitants of a besieged town may sometimes be reduced to feed on horse-flesh: but beyond this instance I find nothing specified. Marcian mentions a tribe called Camel-feeders<sup>299</sup>, in Karmánia; and another styled Turtle-eaters at Samyda<sup>300</sup>, on the coast of the Icthuóphagi: it should rather seem

<sup>296</sup> Strabo says the bones only.

If they had the art of splitting whalebone, a very commodious covering might be obtained, for the jaws of this fish furnish a thousand plates from twelve to fifteen feet long, eight or ten inches broad. Lettice's Tour in Scotland, p. 421.

<sup>297</sup> From a part in the jaw.

<sup>298</sup> This circumstance of using whalebones in building is noticed as late as the ninth century, by the Arab voyagers of Renandot. See Siraf.

<sup>299</sup> Καμηλοφάγοι.

<sup>300</sup> Written Ἀμυδαίη: so little apology is wanting for the addition or subtraction of an initial letter.

that all these names<sup>301</sup> imply disgust at the manners of the natives.

Whether whales are found on this coast at present, or whether houses are still built of their bones, I find no authority to determine. The silence of Lieutenant Porter appears in evidence against it, for it is a peculiarity which would be as likely to command the attention of a modern as an ancient navigator; and whether the animals seen by Nearchus were whales, or not, may possibly be disputed, for the Greek word may be applied to any fish of great magnitude. The size of fifty yards<sup>302</sup> seems to confine the expression to this animal; and though blowing is not peculiar to the whale, the circumstances which are immediately subsequent will best determine the judgment of the reader.

For Nearchus says, that on the morning he was off Kuíza or Guttar, they were surprised by observing the sea thrown up to a great height in the air, as if it were carried up by a whirlwind. The people were alarmed, and inquired of their pilot what might be the cause of the *phênómenon*; he informed them, that it proceeded from the blowing of the whale, and that it was the practice of the creature as he sported in the sea. His re-

<sup>301</sup> Diodorus mentions *χελωνόφαγοι* in islands, with the manner of turning and catching the turtles, p. 189; but unfortunately adds, that the natives sail in the upper shell.

See Agatharchides, Hudson. Geog. Min. p. 34. vol. i.

His turtle-eaters seem to have been the inhabitants of the Maldives or Luckdives.

<sup>302</sup> *ἑικοσι καὶ πέντε ὀργυῖαι*. Twenty-five fathoms.

*ὅτι περὶ ἐκ πηρηύρων βίαι ἀναφερόμενον.*

I never reflect on this passage without ad-

verting to Thevenot's description of the water-spouts seen by him nearly in this very sea. Part II. p. 185. Eng. ed. *Πρηύρ*, however, is said not to be the word which usually expresses that *phênómenon*, but *Τυφών*. Yet I see nothing in either to apply one more particularly than the other, except the modern distinction. I do not mean to infer that Nearchus mistook a water-spout for the blowing of a whale; but the comparison, in this sea more especially, is remarkable.

port by no means quieted their alarm; they stopped rowing from astonishment, and the oars fell from their hands. Nearchus encouraged them, and recalled them to their duty, ordering the heads of the vessels to be pointed at the several creatures as they approached, and to attack them as they would the vessel of an enemy in battle: the fleet immediately formed as if going to engage, and advanced by a signal given; when shouting all together<sup>203</sup>, and dashing the water with their oars, with the trumpets sounding at the same time, they had the satisfaction to see the enemy give way; for upon the approach of the vessels the monsters a-head sunk before them, and rose again a-stern, where they continued their blowing, without exciting any farther alarm. All the credit of the victory fell to the share of Nearchus, and the acclamations of the people expressed their acknowledgment, both of his judgment and fortitude, employed in their unexpected delivery.

The simplicity of this narrative bespeaks its truth, the circumstances are such as would naturally occur to men who had seen animals of this magnitude for the first time; and the better knowledge our navigators are possessed of, who hunt the whale in his polar retreats, shews that he is sometimes as dangerous an enemy as he appeared to the followers of Nearchus.

The mention of this engagement might have been spared in a work dedicated to geographical research, but those who are acquainted with Arrian would not have pardoned the omission; and it is one part of my intention not to defraud Nearchus of any honour due to him, either for his fortitude or his nautical abilities. This transaction is almost the only part of the voyage

<sup>203</sup> ὅσον αἱ κεφαλὴ αὐτῶν ἔχουσιν ἰσαλαλάσαι. As loud as they could shout the *alala*, or cry of war.

that Diodorus thought worth recording; and if the readers of his age had a relish for this sort of history, why should he not have indulged their taste?

But there is a second tale too singular to be passed without observation, for we are informed that the Ichthóphagi derive their origin and manners from a race of men who frequented these seas, and who having by chance or enchantment landed on an island named Nísala, were there entertained by a Nereid, and afterwards transformed into fish. Fortunately for the metamorphosed, this spot was under the protection of the Sun, who, displeased equally at the cruelty of the nymph as her licentiousness, ordered her to depart the island. She submitted to the decree, and was preparing for her exile; but, as a last effort, she hoped by a display of her charms to entangle the god, and involve him in the same fate<sup>304</sup> as his predecessors in her favour had experienced. How great was her mortification, when she found him inattentive to her allurements, and employed in a second transformation of her lovers into their native figure? From these men, so happily restored, the Ichthóphagi derive<sup>305</sup> their origin.

Arrian<sup>306</sup> is offended at Nearchus, first for recording this fable, and then for refuting it: but the story is perfectly Greek; for the Nereid is only Circe, or Calypso, conveyed to the East Indies, and Apollo is Ulysses, but with more continence. The catastrophe of the piece, which consists in the delivery of the metamorphosed, is brought about with more dignity by Apollo's

<sup>304</sup> This is Gronovius's interpretation of an obscure passage.

<sup>305</sup> These are the Myrmidons of Thessaly, the Sparti of Thebes, transplanted to an Indian soil. Nearchus imputes the fable to his

Indian guides: but it is Greek; unless fables similar to the Greek mythology are current all over the world.

<sup>306</sup> Strabo mentions this story, p. 726, with similar circumstances; but without the Nereid.

resisting the temptation, than by Ulysses's<sup>37</sup> yielding to the solicitation of the enchantress.

The best excuse for introducing this tale is, that Nearchus had lost one of his transports manned with Egyptians, and the report was current in the fleet that the vessel had disappeared at an enchanted island; Nearchus ordered out a party to visit this isle, and call aloud the names of those whom he supposed to have been shipwrecked. Not content with this, he went himself to the place, and compelled his people to land, much against their inclination; but they found neither their lost companions nor the Nereid.

Possibly even this excuse will not be admitted; for no island occurs on the whole coast after leaving Ashtola, except a very small one in Guttar Bay, which must have been seen on the day the nameless town was taken, and which lay too clearly in view to cause these idle terrors. If any island exists, it ought to unite the Asthêa of Ptolemy with the Ashtola of our modern charts; but as the whole is a fable, an attempt at consistency may be rather curious than necessary. Still, fable as it is, like many other fables, it is not without its ostensible origin from the native superstition of the inhabitants. For Captain Blair writes, "We were warned by the natives at Passence, that it would be dangerous to approach the island of Ashtola, *as it was enchanted*; and that a ship had been turned into a rock. This superstitious story did not deter us; we visited the island, found plenty of excellent turtle, and saw the rock alluded to, which at a distance had the appearance of a ship under sail.

<sup>37</sup> Ulysses resisted the cup, but not the his passing a year with the goddess is suppression of Circe. Od. K. 347. His refusal pressed. See a very elegant frontispiece on of the cup forms an allusion for the moralist: this subject in Rousseau's Emile.

"The story was probably told to prevent our disturbing the turtle; it has, however, some affinity to the tale of Nearchus's transport."

So perpetual is the duration of superstition, and upon such a foundation does history endeavour to raise the importance of Nearchus, and shew that he was the only man in the fleet who feared neither the blowing of a whale, nor the enchantment of a Nereid.

Upon a review of both these stories, we shall be induced to reflect that Greek mariners were subject to vain terrors and superstitions like those of our own country; and in both, if we find this failing not incompatible with determined bravery, we ought to allow due merit to every commander who knows how to suppress the one, and call the other into action.

I cannot take a final leave of this coast without observing, that the whole distance from the Indus to Cape Jask comes out as near as may be, six hundred and twenty-five miles, equal to the estimation of Arrian on the coast of the Ichthyophagi alone; and this number of miles Nearchus was from seventy to seventy-five days in passing: if, however, with due allowance made for setting out against the monsoon, and twenty-four days lost at Cape Monze, we reduce the whole to forty<sup>22</sup> days, we may form a comparative view between ancient and modern navigation; for it appears from the journal of the Houghton East Indiaman, that she made the same run in thirteen days, and upon her return was only five days from Gomeroon<sup>23</sup> to Scindy Bar. But so far is this from diminishing the credit of the first

<sup>22</sup> Some days were lost on the junction with Leonátus, and at the Tomérus, but not more than were necessary for repairs.

<sup>23</sup> Gombroon, Gambroon, &c. the same as asserted, as in Cymeru, Cambro-Britons.

navigators, that it is enhanced by every difficulty they had to surmount; weak vessels with inexperienced mariners, no provisions but such as an unknown coast might furnish, no convenience for sleeping on board, no pilot but such as they might casually pick up on their course; no certainty that this sea was ever navigated before, or even navigable; and no resources such as the moderns have, without number, in their arms, their instruments, their experience, and the accumulated acquisitions of knowledge, whether practical or theoretical. Under all these disadvantages, if the object was attained, and the voyage completed, it is not the length of the course that ought to raise the name of Columbus higher than that of Nearchus; the consequences derived from the discoveries of both are equally important, and the commerce with the East Indies upon a level with that of America: but if the communication fixed at Alexandria is the origin of the Portuguese discoveries, and the circumnavigation of Africa, Nearchus is in fact the primary author of discovery in general, and the master both of Gama and Columbus.

There is one extraordinary circumstance attending this expedition, which is, that we find little mention of mutiny and none of disease among the people: the former would be naturally checked by their situation, for they had no second hope if they failed in the execution of their enterprise, and no chance of preservation but by obedience to their commander; the latter was less likely to occur, from the circumstances peculiar to the navigation; and the maladies arising from famine or bad provisions appear not to have had sufficient time to exhibit their worst effects: as far as can be collected from the journal, they were



never without shell-fish till within a few days of their arrival; and scorbutic disorders, which are the scourge of the mariner in the protracted voyages of the moderns, are never noticed by the ancients. The proximity of land, the frequency of sleeping on shore, and the properties of their vessels, which were not decked, seem to have operated to the exclusion of a disease, which two hundred years experience is only now teaching modern navigators to combat, and this experience nothing but the persevering discipline of Cook could have reduced to practice.

It is not apparent that the passage<sup>10</sup> from the Indus to the gulph of Persia had ever been performed by the natives, for however great the commerce on that river was, and however extended, its progress naturally bent toward the coast of Malabar and the peninsula. The natives there were all Indians; while on the west, the name terminated at the A'rabis, and all Indian manners with the boundary of the Orîtæ at Málana. This appears to me a proof that no commerce from the Indus was carried farther by the Indians; the other natives, whether Orîtæ or Icthuóphagi, had few embarkations even for fishing, and the Persians were never navigators. If any vessels, therefore, visited these coasts even in that early age, they were probably Arabian<sup>11</sup>; but of this there can be no satisfactory evidence.

<sup>10</sup> Τὰ μὲν γὰρ τῆς Ἑύας Ἀλέξανδρος ὁ Μακεδὼν ἔδωκε τοῖς ἀνθρώποις πάντα νατίησαι.

Anonymous author, cited by Dodwell in his Dissertation on Scylax, p. 47.

Alexander was the discoverer of the east.

<sup>11</sup> The reason for this conjecture has been noticed upon the mention of Dagasíra; and I suspect Sákala, Kókala, Gógana, Málana,

Tálmene, &c. to be all Arabic, if their signification were traced. When I meet with a river called Ægospotamos, I can discover the language of the nation from whence the name is derived as readily as I can assign Cape Finisterre, Cape Clear, or Christmas Sound, to the respective people who have bestowed these appellations.

That something passed upon the sea, and in all appearance from port to port, there seems to be ground for supposing; for Hydrikes could not have been worthy of employment without some sort of experience; and there is a shadow of evidence that the pirates to the eastward of the Indus, who have been pirates in all ages, accidentally visited the coast, either for the purpose of intercepting the traffic, or of plundering the property of the inhabitants. But the whole testimony which can be collected amounts in no degree to a proof of a navigation like that of Nearchus from India to Persia; and as this is the principal link in the future chain of communication with Europe, the merit of examining it seems wholly due to him as the original undertaker. I am not ignorant of a much longer voyage in this very direction imputed to Scylax by Heródotus<sup>22</sup>, from Pactya (the Pekeli<sup>23</sup> of Rennell) into the gulph of Arabia; but whether this voyage was performed by the Persians, or that other round the Cape of Good Hope by the Phœnicians from Egypt, as recorded by him, is a point highly problematical in the opinion of every one who considers the structure of ancient vessels, and their whole method of navigation: I believe the record of both, as preserved by Heródotus, to be evidence that the Persians or Egyptians knew, from communication with the interior of the respective countries, that they were bounded by the ocean, and afforded the means of navigation; but that the voyages were actually performed requires more evidence, more particulars,

<sup>22</sup> "There is a striking analogy between the manners ascribed to the ancient Ichthyophagi and those of these Arabs [on the eastern coast of the gulph of Persia]. . . . They use little food but fish and dates; they feed also their cattle upon fish."

Niebuhr, Eng. ed. vol. ii. p. 138f.

<sup>23</sup> Hérod. lib. iv. p. 300.

<sup>24</sup> The province Peckeli, or Puckeli, on the Indus; but Dodwell supposes Pactya, or Caspatyrus, to be on the Ganges. See Dissertation on Scylax.

and a clearer detail of facts, to enable us to form a judgment. The bare assertion that the thing had been done might lead Alexander to think it practicable; but the Persian voyage produced no consequences whatever, and the Egyptian navigation led to nothing, unless we suppose the Portuguese discoverers influenced by the assertion<sup>14</sup>, that a passage round the Cape was practicable.

Scylax ought to be a Greek by the place of his nativity, Caryanda, or at least an inhabitant of Asia Minor; but we have no remains<sup>15</sup> of his journal, and no other evidence of his voyage but the report of Heródotus, which is very deficient in circumstances to confirm its own authority; and collateral evidence there is none. In regard to the circumnavigation of Africa, there is one particular much insisted on by Larcher, Gesner<sup>16</sup>, and other commentators, which is, the appearance of the sun to the north; a phenomenon dependent on every navigation within the tropics. The reserve of Heródotus<sup>17</sup>, in saying that others may suppose this probable, though he doubts it himself, is a caution worthy of such an historian, and more persuasive than the boldest assertion. I must, however, notice a peculiarity in this passage which seems to have escaped the scrutiny of his commentators; for he informs us in another place<sup>18</sup>,

<sup>14</sup> Whether it will be thought probable that the Portuguese navigators, or the council of Portugal, or any of the learned of that country, knew any thing of Heródotus, I pretend not to judge; but it is a remarkable coincidence, that the first edition of Heródotus was in

1474

Gama's discovery of the Cape, 1497

See Pref. to Wesseling's Herod.

The Court of Portugal, or rather Prince

Henry, had paid every attention to the travellers who had been in the East, as appears from Ramusio.

<sup>15</sup> The Scylax, published in the Geog. Minores by Hudson, is proved to be an imposture by Dodwell.

<sup>16</sup> See Gesner de Navigationibus extra Columnas Herculis, Præl. I. 6.

<sup>17</sup> Lib. iv. p. 298. Ed. Wes.

<sup>18</sup> Lib. ii. p. 115.

that he went up the Nile himself as far as Elephântinè, in order to ascertain some circumstances relative to the head of that river, about which he thought himself imposed upon by a secretary of the priests at Sais. Now is it not extraordinary, that if he reached Elephântinè he should not have visited Suênè<sup>309</sup>, the very place at which he represents his doubts to exist? Is it not strange, that though he lived prior<sup>310</sup> to the construction of the well<sup>311</sup> at Suênè, he should mention nothing of

<sup>309</sup> The modern Assouan, visited by Pocock, Norden, Bruce, &c. &c. Su-ène is Assouan with the article. D'Anville, *Geog. Anc.*

<sup>310</sup> Bruce is of opinion that the well is coeval with the city, i. 162.

<sup>311</sup> I know no testimony of the well at Suênè older than Strabo, lib. xvii. 817. but conclude that older may be found. Pliny, lib. ii. cap. 73, seems to intimate, that it was dug by Eratosthenes at the time he was measuring an arc of the meridian. The following observations are kindly communicated by the Bishop of St. Asaph:

The well, besides that it was sunk perpendicularly with the greatest accuracy, was, I suppose, in shape an exact cylinder. Its breadth must have been moderate, so that a person, standing upon the brink, might safely stoop enough over it to bring his eye into the axis of the cylinder, where it would be perpendicularly over the centre of the circular surface of the water. The water must have stood at a moderate height below the mouth of the well, far enough below the mouth to be sheltered from the action of the wind, that its surface might be perfectly smooth and motionless; and not so low, but that the whole of its circular surface might be distinctly seen by the observer on the brink. A well formed in this manner would afford, as I apprehend, the most certain observation of the sun's ap-

pulse to the zenith, that could be made with the naked eye; for when the sun's centre was upon the zenith, his disc would be seen by reflection in the water, in the very middle of the well; that is, as a circle perfectly concentric with the circle of the water: and I believe, there is nothing of which the naked eye can judge with so much precision as the concentricity of two circles, provided the circles be neither very nearly equal, nor the inner circle very small in proportion to the outer.

Plutarch says, that in his time the gnomons at Suênè were no longer shadowless on the solstitial day. This is very strange. Eratosthenes died, according to Blair's Tables, in the year before Christ 194; and Plutarch died in the year of Christ 119. The interval, therefore, between them was only 312 years; and the change of the obliquity of the ecliptic in this time (the only cause to which I can refer the alteration) was no more than 2' 36". A gnomon, therefore, at Suênè of the length of twelve inches, if it cast no shadow on the day of the solstice, in the time of Eratosthenes, should have cast a shadow, in the time of Plutarch, of the length only of  $\frac{2}{100}$ ths, i. e. not quite  $\frac{1}{50}$ th of an inch. The shadow of a perpendicular column of the height of 100 feet would have been  $\frac{2}{10}$ ths of an inch. But I can hardly think the ancients ever thought of constructing gnomons of such a size. We read, indeed, in the Comedians, of shadows of ten,

the situation of Suênè itself under the tropic? Had he been there in summer, he must himself have seen the phenomenon he professes to doubt, or at least the sun vertical; and if his visit was at any other season, is it not remarkable that he should not have heard of this circumstance? Elephantinè is an island, or a city on an island, in the Nile, opposite to Suênè<sup>322</sup>, and yet Heródotus does not quite say he was actually at Suênè. From his mention that the Cataracts are four days' sail from the Elephantinè he visited, may we not suspect that it was some island lower down (for there are many), or that the island<sup>323</sup> called Elephantinè by Pocock is not the Elephantinè of Herodotus? and that the historian was not nearer Suênè than within three days' sail? for it is in reality less<sup>324</sup> than one day's sail or journey by land from Suênè to the Cataracts. I mention these particulars, in order to shew the great obscurity which attends all the discoveries, whether real or pretended, in ages antecedent to history; and notwithstanding all that Mr. Gosselin

twelve, and even twenty feet long. These seem to have been the shadows of gnomons: but they were evening shadows, when the sun was low, and people were going to supper: and this affords an argument that the gnomons of the ancients were of a very moderate size; for in the latitude of 40°, at the season of the equinoxes, the sun's altitude, one hour before sunset, would be 11° 26'; and a gnomon, of the height of 2 feet  $\frac{2}{3}$ ths of an inch, would cast a shadow on the horizontal plane precisely ten feet long. Half an hour before sunset, a gnomon of the height of one foot would cast a shadow ten feet long. And in the same latitude, at the same season, a gnomon of the height of six feet would cast a shadow of the length of ten feet so early as eleven minutes after three in the afternoon. I think the small variation that took place, between the

time of Eratósthenes and that of Plutarch, would be more easily discovered by the well than by any gnomon the ancients can be supposed to have used.

<sup>322</sup> Pocock, B. ii. p. 117. Bruce.

<sup>323</sup> Bruce mentions the island, but does not call it Elephantinè. Vol. i. p. 150.

<sup>324</sup> "The distance from the gate of the town [Assuan] to Termissi or Marada, the small villages on the Cataract, is exactly six English miles." Bruce, vol. i. p. 156.

See also a very curious account of the well and the latitude of Suênè, which Bruce fixes at 24° 0' 45", and consequently not under the tropic, p. 160; but more than half a degree to the north. Bruce, however, allows for the approximation of the ecliptic to the equator. The circumference also of the sun's disc is to be taken into the account.

has produced, to prove an early state of navigation and geography, previous to the knowledge of the Greeks, and founded upon better principles; notwithstanding the erudition displayed by Gesner in his treatise<sup>235</sup> on the navigation of the Phœnicians in the Atlantic; there is nothing appears sufficiently satisfactory to establish the authenticity of any one prior voyage, of equal importance, upon a footing with this of Nearchus; or any certainty to be obtained where the evidence is all affirmation, without circumstances or proof. From a journal like the *Periplus*<sup>236</sup> of Hanno, a knowledge of the coast of Africa will enable us to form some judgment of his progress; but a bare assertion of the performance of any voyage, without consequences attendant or connected, without collateral or contemporary testimony, is too slight a foundation to support any superstructure of importance. I should think it time well employed to vindicate the honour of Columbus against the usurpation of Vesputius; but I would not bestow a moment in annulling the claim of Madock and his Cambro-Britons to the discovery of America. The reader may conceive that this vindication of Nearchus partakes more of the partiality of an editor than the investigation of truth: but I appeal to the ancient geographical fragments still extant; the *Periplus* of Hanno, the survey of the Euxine sea by the real Arrian, and that of the Erythræan sea or Indian ocean by the fictitious one; and I say that all these, as well as the journal of Nearchus, though they have, their errors, difficulties, or even absurdities, still contain internal evidence of veracity, and are well worthy of examination; while the expedition of the Ar-

<sup>235</sup> Published with his edition of the works of Orpheus. Dodwell errs as frequently on the side of scepticism as others do on the side of credulity.

<sup>236</sup> Dodwell doubts the authenticity; but

gonauts<sup>327</sup>, of Py'theas or Scylax is merely a speculation of amusement.

There is, however, another way of inquiry into the discoveries attributed to the earliest times, which is, by examining the commodities such discoveries would produce. Tin, the staple of Britain, is mentioned in the most ancient authors neither as a rare, nor a very precious metal; this must have been introduced to the nations on the Mediterranean, either by a transport over land (such as is mentioned by Diodorus<sup>328</sup>), or through the medium of a Phénician navigation: the existence of the metal, therefore, in Greece and Asia is a proof that the intercourse was established in some sense or other. The sudden influx of gold into Judéa<sup>329</sup> is equally a proof of a commerce extended into the Indian or Ethiopic ocean, beyond the limits of the gulph of Arabia. The materials still found in Egypt, that contributed to the preservation of the mummies, are some of them supposed to be Oriental; and if so, Egypt must have had, even antecedent<sup>330</sup> to history, a communication with the

<sup>327</sup> Gesner, in his Preface to the Argonauticks of Orpheus, is confident that there is no expression that indicates they are posterior to the age of Homer. If the fact is so, it must be confessed that the mention or knowledge of Ireland, which occurs in that work, is an extent of geographical science most surprising; for Homer's information went no farther than Italy, and even there it was only mythological.

<sup>328</sup> Lib. v. p. 361. Ed. Wes.

Diodorus here mentions tin found in Spain, but not in great quantities; and it is highly probable that the grand source of that metal was always in Britain.

<sup>329</sup> It is not the business of this work to follow up these several incidents; but Bruce

has illustrated the commerce of Hiram, Solomon, the Arabians and Egyptians on the Red Sea, if not truly, at least very ingeniously. When the haughty spirit which procured so many enemies to this illustrious traveller shall be forgotten, neither his knowledge nor his veracity will be longer impeached. There is much scope for curious investigation upon the whole of this subject, which Dr. Robertson has not prosecuted to its full extent. See Ezekiel, chap. xxvii.

<sup>330</sup> "Several authors agree in opinion, that the ancient Egyptians possessed themselves of the trade of the East by the Red Sea; and that they carried on a considerable traffic with the Indian nations before the time of Sesostris, who was contemporary

East, either directly by commerce of their own, or indirectly by means of intermediate nations, perhaps Arabian. In all these cases, we have a right to assume the communication from the view of its effects; but the voyage<sup>30</sup> of Scylax from India to Egypt, or that of the Phœnicians from Egypt round the continent of Africa, have neither produce nor consequences; and though this is only a negative proof of their nonentity, it is as strong as the nature of the case will admit: if no second navigator had doubled the Cape of Good Hope, the discovery of Gama might have been deemed problematical. Were it possible to ascribe these two voyages to the age of Heródotus, his testimony is such, that it ought to preponderate against every argument of mere speculation: but he probably records only the vanity of two nations, one the most proud of its empire, and the other of its science; both capable of attributing to themselves an action done, if it were possible to be done; and of this, the possibility was perhaps known from internal informa-

"with Abraham." Astle. *Or. and Progress of Writing*, p. 41; who quotes Rollin, p. 59, 60. and *Univ. History*, vol. i. p. 513. and might have added Huet.

I pretend not to investigate any fact antecedent to history; but I can believe the Egyptians (from the increasing evidence we now have of their arts, through the means of Pocock, Norden, and Bruce) to have been capable of any enterprise. Navigation, however, does not appear as one of their pursuits, for we cannot imagine those who never appear upon the Mediterranean, to have made any great efforts upon the Indian ocean. All the vessels we find in early ages on the Mediterranean are either Greek or Phœnician. Phœnicians navigated the Red Sea for Solomon, and not Egyptians, 2 *Chronicle* ix. 21.; and if the Egyptians had possessed a trade on

that sea, they would not have suffered rivals to interfere. The passage round Africa is not attributed by Heródotus to Egyptians, but Phœnicians: but I decline all disquisition on these matters previous to history; and mean at present only to maintain, that if we have the real journal of Nearchus in Arrian, it is the first authentic document of a voyage of importance to navigation.

<sup>31</sup> It is not impossible that all these assertions of circumnavigation arose from the idea of the ancients, that the ocean surrounded the earth like an island; an idea in some degree true: but unfortunately for one of these assertions, that of Patrôcles, who maintained there was a passage from the Indian ocean into the Caspian sea, it has turned out that the Caspian is a lake. See Strabo, lib. xi. p. 518.



tion. My own<sup>332</sup> opinion is decidedly against the reality<sup>333</sup> of both these voyages; but whatever be my own judgment, it shall be subject to the decision of those<sup>334</sup> who professedly consider the question in its full extent; it is here only incidental: but I must still repeat, that it is the assertion of facts without circumstances, while the voyage of Nearchus is detailed in all its parts, and is the earliest<sup>335</sup> authentic journal extant. But to shew how easily circumnavigations are imputed to those who never performed them, let us attend to Pliny, who makes Hanno sail round Africa from Carthage, and Eudoxus from the Red Sea to the Mediterranean. Now we have Hanno's journal, who never passed the Senegal by his own account; and we have the history of Eudoxus in Strabo, lib. ii. p. 98. from Poseidônios; and from him it appears, that if Eudoxus had performed this voyage, it would have commenced from Gades. Eudoxus lived in the reign of Ptolemy Euérgetes, and Ptolemy Láthyrus; and it appears that he did not perform the voyage, but was very persevering in seeking for patronage to enable him to undertake it. Pliny quotes Cornelius Nepos. Strabo believes little of Poseidônios's account. See p. 102. Eudoxus is said to have sailed down the coast of Africa with a west wind! a certain proof that he and his historians knew nothing of the trade wind.

<sup>332</sup> Rien n'étoit si peu avéré chez les anciens, comme on en juge par Ptolémée, que le récit qu'on faisoit de quelques navigations qui auroient tourné le continent de l'Afrique par le midi. D'Anville, *Geo. Anc.* iii. 68.

<sup>333</sup> Mickle, in the opening of his *Lusiad*, agrees with this, but adds, most unaccountably, p. 2, "Though it is *certain* that Hanno doubled the Cape of Good Hope." Now the contrary is *certain*; and no man could say this who had read Hanno's journal.

<sup>334</sup> Gesner.

<sup>335</sup> It is prior to the *Periplus* of Hanno, if it is the same Hanno, contemporary with Agathocles as generally supposed, for Agathocles died anno 289 A.C. The Greek *Periplus* of Hanno which we have is of a late age, according to Dodwell, and a copy or extract possibly from the Carthaginian journal, as Arrian's is from Nearchus; but by others, Hanno is supposed to be much more ancient.

If Arrian had said the monsoons blew north and south, we might justly have said Nearchus never navigated the Indian ocean. Bruce seems to be so involved in hypothesis, that he contradicts Strabo and Ptolemy at random ; so misled by Vossius, as to style Gadosia, Ariana ; and so unacquainted with Arrian, as to make Nearchus not only sail up the gulph of Persia, but to complete his voyage to the head of the Red Sea. See Bruce, p. 470, and 456, vol. i. and Vossius ad Melam. Ariana.

If then, after noticing these lapses in others, I am correct myself, this voyage of Nearchus is the first of general importance to mankind ; if I am mistaken, it is still the first of which any certain record is preserved.

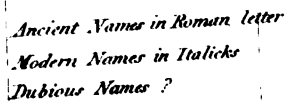
This discussion may appear more appropriate to the conclusion, than the progress of the enterprise ; but the fact is, that, at this point, the great difficulty of the whole passage was surmounted ; the remaining part, up the Gulph of Persia, was neither exposed to the calamity of famine, nor hazardous from the nature of the coast. We shall have some opportunities to remark, that as there was commerce among the natives, there were consequently pilots to be obtained ; and so satisfied was Nearchus of the facility of his future charge, that he refused being exonerated of the command.

The narrative itself also will, in some degree, be relieved from a barren recital of distresses, and a dubious arrangement of geography ; our classical guides will be more intelligible ; and our modern conductors, Dalrymple, d'Anville, and Niebuhr, more satisfactory. I have already mentioned d'Anville's dissertation on the navigation of the Gulph of Persia ; and if I performed no other service than introducing this work to the knowledge of the English reader, it would be an undertaking of merit.





A horizontal line with vertical tick marks at the left end, the midpoint, and the right end. The number '1' is centered above the midpoint tick mark, and the number '2' is centered above the right end tick mark. Below the line, the text 'Nautic Miles' is centered.



THE  
VOYAGE  
OF  
NEARCHUS.

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BOOK IV.

GULPH OF PERSIA.

I. *Karmania*.—II. *Persis*.—III. *Susis, or Susiana: Tigris, Euphrates, Eulêus, and Pasitigris*.

WE are now to enter upon the navigation of the Gulph of Persia, comprehending the coast of Karmania, Persis, and Susiana; and, fortunately for this part of the voyage, our materials are as ample as could be desired. Mr. d'Anville has published a *Memoir*<sup>1</sup> expressly upon the subject, which I shall use so freely as to preclude the necessity of specifying the passages immediately referred to, unless where I am constrained to dissent from his arrangement; and this I shall always do with the respect due both to his classical and geographical pre-eminence: but our English navigators have, within these few years, explored this gulph so successfully, as to leave little more

<sup>1</sup> Vol. xxx, *Memoirs of the Academy of Inscriptions, &c.*

for the investigation of others. With these Mr. d'Anville was of course unacquainted; and, for want of the information they afford, was necessarily mistaken in fixing some points of importance, more particularly at the head of the gulph, and the mouths of the Euphrates, the Tigris, and the Eulêus.

I have a variety of charts furnished by Mr. Dalrymple, accompanied with observations of his own<sup>2</sup>, and illustrated by personal communication with him; but especially four by Lieutenant M'Cluer, a most active and intelligent officer, which render all that concerns hydrography almost as perspicuous as we could hope to find it on any coast of Europe: two of these comprehend the lower, and two the upper part of the gulph; the later publication in both instances is the more correct, and in both instances agrees best with Arrian. This is no accidental correspondence, for Nearchus, by adhering to the coast, is necessarily more minute than a modern navigator who pursues his course unrestrained; but the more such a navigator enters into the detail of the coast, and the more intimate knowledge he acquires of it, the better ought his information naturally to coincide with a journal of such discoverers as the Greeks. Mountains, rivers, bays, shoals, and islands are in their nature eternal; if these are marked distinctly by Nearchus, they will still be discoverable by their features; if otherwise, I would abandon the journal as a fiction. The issue is, however, ex-

<sup>2</sup> Charts from Mr. D.  
Four by M'Cluer.  
Two by Harvey.  
Two by d'Après.  
One, Niebuhr.  
One, Van Keulen.  
Two, Thornton's.  
One, Claude Russell.

One, communicated to Mr. Dalrymple by Captain Howe, containing the mouths of the Euphrates.—Besides a variety of plans and topographical sketches.  
One, Lieutenant Cant.  
One, Kämpfer.  
One, Engelbert.  
One, Friend.

actly what we could desire; for such is the conformity of it with the modern accounts, that there will not remain a doubt<sup>1</sup> upon more than one or two stations in the whole gulph.

In regard to the geography of the country, I have not only consulted classical authority, and the best modern travellers; but, where I could obtain it, have sought for personal information from those who have been resident in the country. To Mr. Jones I am more especially obliged, who was head of the English factory at Busheer for several years, and afterwards in the same office at Basra. This gentleman, from his knowledge of the Persian language, his connexions and intimacy with the principal persons in power, and his frequent visits to the interior part of the country, is better qualified to decide in points of doubt, than almost any European who has been in Persia; and I ought to add, that, without any previous knowledge of the author, he was as ready, as he was able, to communicate information.

With every assistance, however, that can be obtained, it is not in my power to give the course of the rivers with that correctness I wish; and though d'Anville has performed a great service, in shewing that the rivers of Persis, beyond the mountains, never reach the sea, but are lost in lakes, exhausted upon agriculture, or absorbed by sands; and though he has likewise proved that the rivers, which fall into the gulph, are all derived from the range which runs parallel with the coast, and forms the back ground of the Kermesir<sup>2</sup>, or hot level country next the sea, he is still undoubtedly mistaken in the course

<sup>1</sup> This is to be understood of places which measurement (such as it is) and circumstances, have a name and characters. All anchorages on an open coast can be ascertained only by graphy.



and names he gives to some of those in the upper part of the gulph ; and I am not fully furnished with materials to correct his errors. The cause of this lies in the nature of the journals themselves. Of these, I have consulted a great number ; but every one of them takes its direction from the point where the author landed, to Schiraz, or from Schiraz to the coast ; and there is not one that goes along the Kermesir below the mountains, nor perhaps ever will be one ; for it is a matter of doubt whether any European, except Hephêstion and the forces he commanded, ever trod the whole extent of this ground ; and as this is the only route which could cut the streams from the mountains at right angles, and afford the means of establishing the order in which they succeed, it will be long before this desideratum in geography can be supplied. Pietro della Vallé went from Mina to Lar ; but from Lar, north-west to the A'rosis or Endian, there is no method of continuing the line but by fragments of routes from Al Edrissi, or by enumerating the principal places which lie in that direction.

I must now return to the fleet, which I left at Badis, that is, in the bay of Jask, in order to conduct it along the coast of Karmánia. Badis I have concluded to be either the town of Jask, marked in Baffin's plan and Captain Blair's sketch, or upon the river laid down by Baffin in the bay, about five miles from the head of Jask, if there ever has been a town in that situation. Cutler<sup>s</sup> has noticed this river as a secure harbour for any vessel not drawing more than eleven feet, and here a fleet of Greek gallies might have lain, though, from the shortness of the time Nearchus staid, we ought rather to suppose he rode in

<sup>s</sup> Cutler, p. 83, in Dalrymple's Col- to have copied from Baffin ; and Thornton lection. Thornton, p. 69, *ibid.* Both seem not correctly.

the open bay. No day is specified here, but as this was the first place where it was possible to procure a supply, after the distress they had experienced for some time past, it is necessary to allow a day, both for receiving the supply on board, and to give some relief to the people. After weighing, the following day the fleet proceeded fifty miles, and came to an anchor again upon an open coast. This anchorage, as it has no characteristic to distinguish it, but that the cape on the Arabian side of the gulph was in view, I have a right to fix by the measure of the course, if it coincides with a sight of that object. The journal, in fact, gives an hundred miles between Badis<sup>6</sup> and the river Anamis or Mina: and notwithstanding d'Anville's map gives the same distance between Karpella and the Anamis, there is great reason to suppose that he has both extended<sup>7</sup> the measure between the two, and carried the Anamis nearer to Gomeroon than it ought to be; for his own map of Asia allots only<sup>8</sup> one degree, while that composed for the memoir allows a degree and an half for the same space. The suspicion on this head is confirmed both by Niebuhr and Pietro della Vallé. Upon reference to the charts it will immediately appear, that there is a cape on the Persian coast, nearly opposite to Mussondon on the Arabian side; and the streight between these two points is exactly the part where the entrance into the gulph is

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First station  
in KARMA-  
NIA.  
BADIS.  
Dec. 17.  
Seventy-  
seventh day.

---

AN OPEN  
SHORE.  
Dec. 18.  
Seventy-  
eighth day.

---

<sup>6</sup> Both Gronovius and Salmasius, from an error in Pliny, seem to suppose that Badis is the Sabis of Ptolemy and the Sabai of Dionysius: but Sabis is an inland town, and Sabai is in Persis. See Gronovius in loco, p. 347. Salmas. Plin. Ex. 1188.

<sup>7</sup> The Neptune Oriental Fr. places Cape Jask and Jask bay, apparently from Texeira, almost due south of Bombareek, instead of

south-east: but it is very remarkable that the measure from Cape Jask to the river Ibrahim is 110 geographical miles precisely, a distance not so far exceeding Arrian's measures as to make it incompatible with them; for all his measures on the coast of Karmania and Persis are short of the real distance.

<sup>8</sup> See the general map of Asia, first part.

narrowest. It measures here only thirty-four\* nautic miles in M'Cluer's chart, and Mussendon is so high as to be visible, not only on the coast opposite, but almost all the way from Karpella. The cape on the Persian side is improperly named Bombareek by M'Cluer, an error he fell into from considering the real Bombareek as Jask: but this cape is the Armôzon of Ptolemy, as appears evidently by his series, though it has no name in our English charts on which I can depend. It is in the curve previous to this cape that I fix the present anchorage on an open shore; and in the passage from Badis to this point, the fleet must have passed the Bombareek rock, though no notice is taken of it, nor of Mount Elbourz, not far from which they must have anchored. Bombareek, which is the orthography I adopt, is no otherwise proper than as the term most in use by our navigators; but it passes through a great variety of appellations", all, as I have before ob-

\* Pliny says, fifty Roman miles. D'Anville makes it about twenty-four miles and an half English. See Plin. lib. vi. c. 23. c. 26. D'Anville Mem. p. 144.

Pliny is nearer the truth than d'Anville chooses to allow. Arrian says, it is a day's sail. Six or seven of the charts before me agree with M'Cluer; and d'Anville hazards some deductions of importance, if he is mistaken.

Pietro della Vallè and Niebuhr write it Cohum-baregh, *sable delié*, loose sand. Mr. Jones writes Cohum-bareek, low sand, flat or level. Colonel Capper writes it Co-mobarick, Hill of Congratulation. But Bareek and Mobareek are both Arabic, and allied to the Hebrew בָּרַךְ, Barack, to bless; and it is remarkable that Barack signifies both to bless and to couch or lie flat, so that Mr. Jones and

Colonel Capper have each of them a right to their respective interpretations. But I find one reason for inclining to Colonel Capper's, because the Arabs who sail out of the gulph of Persia take their departure with a Salam, or salutation of peace, from Mosalem or Mosandon, on the opposite coast; and may well salute Bombareek as the entrance to the gulph on their return. If this be admitted, Co-Mobareek stands fairest for the true appellation; but when the Orientalists differ so widely from each other, they should be sparing of their strictures upon those who profess themselves unskilled in this branch of literature. Mosalem is a participle of an Arabic verb, derived from the Hebrew מָלַם, Salam, to salute; in the same form as Mobareek from Barack.

served, corruptions of Cohum-bareek", and appears from the sea as is here represented, in a level plain of loose sand, between two and three miles from the shore, but is not an island, as it is laid down in d'Anville and several of the older charts. This is the rock which gives name to the cape, and at the cape there is a small creek, but so entirely choked up", that it will not admit a boat; it is represented in Commodore Robinson's chart, in the chart composed for this work, and in Captain Blair's sketch: if Badis were to be fixed, therefore, at Karpella, this creek must be assumed for the position of the town, but there is no town here at present; and, from the sterile sand in the neighbourhood, it does not appear that a town could exist. This circumstance, added to the insignificance of the creek, contributes to extinguish all idea of fixing Badis here, while an ample bay, a town, and a river, added to the acute angle of the cape at Jask, direct us to prefer that as the true position of Badis.

Mount Elbourz, or Ehours", the Strongylus of Ptolemy, the Round Mountain of Semiramis, as it is called by Marcian, lies, according to Ptolemy, thirty nautic miles north of Karpella.

" Gombareek, Gombarreek, Gombarat, Bombarack, Bombarick, Mumbarick.

" This has arisen from a deception of the sight when the object was viewed at a distance, and the coast was not high enough to appear.

" Lieutenant Porter, Lieutenant Blair.

" Ouair and Kosair are two rocks in the gulph, or at the entrance of it, which might be thought Moçandon and Ebours, both in the Nubian Geographer and Renandot's Arabs; but the Nubian (p. 56.) places them at the island Ben Cavan or Kismis, and says,

small ships pass them, but not those employed in the China trade. This makes them appear as if they were on the inner channel of Kismis. He adds, that they are low, and the sea washes over them. This character does not suit either Moçandon or Ehours; and yet Ouair is so nearly allied to Ehours in sound, that a connection might be supposed. That Ben Cavan is Kismis cannot be doubted; for he says, it lies to the south of Keis, and is fifty-two miles long by nine broad.

D'Anville gives it nearly the same distance, and Samuel Thornton something more; but it is in my estimation only twenty-four miles, to which if we add twenty-seven from Jask to Karpella, the total is fifty-one miles, differing only one mile from Arrian. My authority for this is the journal of the Houghton East Indian<sup>15</sup>, which may possibly reckon from the Bombareck rock rather than the cape. Even in this case, the distance will fall short only eight miles; this is the extent of the difference, and many of the measures on the coast of Karmania will partake of the same deficiency. It may seem extraordinary that such a rock as Bombareck, and a mountain like Elbourz, which had evidently attracted the notice of mariners in the age of Ptolemy, should be passed in silence by the journal; but similar instances are not unfrequent; errors of addition there are none, but omissions have already occurred, and there are some more to occur<sup>16</sup> in the course of the navigation: but it is observable, upon more occasions than the present, that a rock, an headland, or a river, however unnoticed, attracts the fleet to an anchorage; and this is probably the case with Elbourz in the instance before us. Arrian seems to consider the gulph of Persia as commencing at a line drawn between Cape Mussendon and the shore where the fleet now rode: and this naturally directs us to Elbourz itself, which Marcian describes as close to Armózon. His language is so precise, that I shall adduce his very words: "Near Armózon" lies the Round Mountain of Semíramis; "opposite to which is Mount Pásabo in Arabia, and the pro-

<sup>15</sup> "Mount de Chouse is eight leagues to the eastward [northward] of Bombareck." Journal of the Houghton, 1755.

<sup>16</sup> The island at Bender-Regh, &c.

<sup>17</sup> *Ἀρμένιος* . . . . . *ἐνταῦθα παρῶκεται τὸ*

*προϊόντιν γρογγύλον ὄρος Σιμεράμιδος, ὅπερ ἀντικείμενον ἴσμεν κατὰ τὴν ἐνδύμιμον Ἀραβίαν Πασαβὸν ὄρος τε καὶ ἀκρωτήριον, ὅπερ ἐκάτερα ὄρη τε καὶ ἀκρωτήρια τὰ εἰς τὸν Περσικὸν κόλπον.* Marcian Hude. Geog. Min. p. 21.

“ promontory formed by it: these two mountains, with their  
 “ promontories, form the streights at the entrance of the gulph  
 “ of Persia.” Pásabo is the Sabo and A’sabo of Ptolemy, the  
 Mussendon of our modern charts; and Stróngylus, or the Round  
 Mountain, is the Elbourz of d’Anville, transformed by our  
 English navigators into Ehowers, Howres, Howse, and Chowse.  
 M’Cluer has very improperly brought Bombarceek to this cape  
 and mountain, but I admit his delineation of the coast; and  
 here, attracted by the Stróngylus, I bring Nearchus to an anchor.  
 The ancient name of Mussendon<sup>18</sup> is Makæ<sup>19</sup>, and Máketa, as  
 well as A’sabo, and the cape itself is the termination of a very  
 high and broken island<sup>20</sup>, partaking of the nature of a craggy  
 ridge on the continent of Arabia, called the Black Mountains  
 by Ptolemy. These, with their adjunct<sup>21</sup> Asabo<sup>22</sup>, express the  
 Black Mountains of the south<sup>23</sup>; for towards this point they lie  
 in respect to the Arabians, who conferred the title upon them.  
 Several small and rugged islets lie off this cape, called the  
 Coins<sup>24</sup>, from forming the angle of the streights, as I imagine,  
 and the whole presents a frightful appearance, if the delineation  
 of Ressende in the British Museum may be credited.

<sup>18</sup> Written Musseldom, Mussendom, Mo-  
 chandan, Moçandan, &c. &c.

I believe this to be a corruption; the real  
 name is Cape Ma-salaum, *i. e.* Cape Safety:  
 and the Lascars or country sailors, on board a  
 vessel coming into the gulph, have always  
 ready to launch, at the time the vessel rounds  
 this cape, a little vessel rigged exactly similar  
 to the one they navigate, on board of which  
 they put little morsels of different parts of the  
 cargo, and then with great ceremony commit  
 the toy to the waves. Mr. H. Jones.

<sup>19</sup> Makæ, more properly the people.

<sup>20</sup> M’Cluer, p. 16.

<sup>21</sup> *μίλανα ὄρη καλῶμενα Ἀσασῶν*. Ptol. p. 153.

<sup>22</sup> Arabic, Aswad, Black. Mr. H. Jones.

<sup>23</sup> Sabo, with the article in Arabic, As-  
 Sabo. D’Anville Geog. Anc. vol. ii. 228.  
 Sabo signifies south. Bruce, vol. i. p. 381.  
 So in Scripture, the queen of Seba is called  
 the Queen of the South. Mat. xii. 42. Mar-  
 cian writes the name Pasabo probably by a  
 corruption of the text.

<sup>24</sup> Parce qu’elles ont de loin la figure d’un  
 coin. Nieb. ii. p. 186.

The sight of Mussendon gave rise to a dispute which renders this anchorage important, for this promontory Onesícritus proposed to explore, with the intention, it should seem, of extending the voyage to the Gulph of Arabia. He asserted that<sup>25</sup> they were in distress, and likely to be driven about the gulph they were now entering, without knowledge of the coast, or any determinate point to which they might direct their course. Nearchus<sup>26</sup> resisted this proposal with the utmost steadiness; he represented to the council of officers, that Onesícritus appeared ignorant of the design of Alexander, who had not put the people on board because there were no means of conducting them by land; but that his express purpose was, to obtain a knowledge of the coast, with such harbours, bays, and islands as might occur in the course of the voyage; to ascertain whether there were any towns bordering on the ocean; and whether the country was habitable or desert. He added, that they had now almost obtained the object of their expedition; and that they ought not to hazard the completion of it, by the pursuit of a different design: that the cape in view proved, that the coast below it tended to the south, where the country might be more directly under the influence of the sun, more torrid, parched, and destitute of water; and that, since they had reached the coast of Karmania, they were no longer in despair of support. These were all reasons, he alleged, for pursuing the course they were now in, rather than deviating from it; and if Alexander

<sup>25</sup> ὡς μὴ κατὰ τὸν κόλπον ἐλαττεύοντες τὰ λαν-  
περίσθαι.

It is not very evident what Onesícritus means; but as Alexander was master of Egypt, he might consider the gulph of Arabia as a sea known to the Egyptians, and more likely

to afford them safety or protection than the Gulph of Persia, which had never yet been visited by his countrymen.

<sup>26</sup> This dispute is not only detailed in the journal, but recorded in the history, p. 301.

had completed his expedition by land, there was reasonable ground for hope that a communication with the army might be obtained, when all the dangers they had experienced would be rewarded by the approbation of the king, and the applauses of their countrymen.

This address had its due effect upon the council; the advice of the admiral was adopted; and in this instance, says Arrian, I am persuaded that the success of the expedition, and the preservation of all that had embarked in it, is imputable solely to Nearchus: an encomium to which no one can refuse to subscribe who is acquainted with the coast of Arabia, and considers the total unfitness of the fleet for such a navigation.

Pietro della Vallé, who resided some time at Mina, a town on the river Anamis, in this neighbourhood, has furnished some general circumstances that demand attention; for he not only mentions the river at Mina, which he calls Ibrahim<sup>27</sup>; and which must be the Anamis, to which the fleet is now directing its course, but notices two or three little ports between the present anchorage and Gomeroon; not that they are ports, he adds, but that every village where a vessel can land her cargo, or whence there are a few vessels sent to sea, obtains the name of Bender; and, in this sense, Kuhesteck and Bender Ibrahim are ports as well as Bender Abbassi or Gomeroon. Such a port as this was probably Neóptana, a place which the fleet reached the following day, after a course of forty-four miles; and Bender Ibrahim, the port at the river Ibrahim, or Anamis, seems to occupy the very same ground on which Nearchus formed his naval camp, when he arrived at that river the succeeding day:

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NEOPTANA.  
Dec. 19.  
Seventy-  
ninth day.

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ANAMIS  
River.  
Dec. 20.  
Eightieth  
day.

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<sup>27</sup> Probably a Mahometan title from some Imam, or sovereign. ✱



the distance from Neóptana is stated at about six miles, making in the whole an hundred miles from Badis.

Upon a review of this distance, I am more confirmed in fixing Badis at Jask, and the first anchorage from thence at Elbourz, for the measure of about fifty miles, comes out consistent both by the journal and our modern accounts; and if the space from Elbourz to the Anamis does not correspond so happily; it must be observed that M. d'Anville has lengthened that distance<sup>a</sup> in the map of his memoir, in order to accommodate it to his interpretation of the journal: this at least I suspect, though I cannot find the means of correction, for our English charts are too hydrographical to notice so small a stream, and it must be confessed that the manuscript of Ressende, which was consulted, carries the Obremi, as Ibrahim is there written, much nearer to Ormuz.

The river Anamis is fixed by Arrian in the country of Har-mozeia, an appellation which immediately suggests the resemblance it bears to Harmuz or Hormuz, the celebrated isle of Ormuz, in the neighbourhood. The same title is given to this tract by Ptolemy, of which his Cape Armózon is the boundary; and the means by which the name passed from the continent to the island are common to almost every island in the gulph. This tract is styled Moghostan, or the date country, in Oriental geography, extending to Karpella, or perhaps Jask; and as we are much concerned with the interior part of it, on account of the journey taken by Nearchus from the Anamis, to the encampment of the army, it is fortunate that we have the inform-

<sup>a</sup> The distance is greater in the map constructed for his memoir than in that of Asia, premiere partie.

ation of so circumstantial a traveller as Pietro della Vallé to direct our investigation.

Pietro della Vallé was a Roman of noble family, who, after residing some years in Persia, came down from Schiraz, with an intention of embarking at Ormuz for the East Indies; but upon his reaching the coast he found the forces of Persia collected, which, with the assistance of the English fleet, were to wrest the possession of this Oriental emporium from the Portuguese. The consequence necessarily was, that all communication with the island was prohibited, and that, in order to avoid the insolence of the soldiery, he kept at a distance from the coast, taking up his abode at Mina, the capital of the district, where he continued during the latter end of the year one thousand six hundred and twenty-one, and the commencement<sup>29</sup> of one thousand six hundred and twenty-two. He had here the misfortune to lose his beloved Maani, a Christian lady, and a Nestorian, whom he had married at Bagdat, and in whose story are interspersed a variety of pathetic<sup>30</sup> incidents, painted with the romantic gallantry of an Italian lover, and surpassing in reality all the lucid fictions of a modern novel. I have not thought it inconsistent with my design to mention these particulars, because the geographical information dependant on them is important. He acquaints us, then, that Mina is the capital of Moghostan; and this its name implies, for Mina<sup>31</sup> signifies a

<sup>29</sup> Tom. v. in fine.

<sup>30</sup> The writings of Petrarch formed a school of romantic lovers in Italy; and Pietro was an academician of the society called *Humourists*, at Rome. His narrative is often poetical, and Madam Maani's horse Dervisch

is upon a level with Argus, the dog of Ulysses, without the appearance of imitation. Gibbon styles him, not without reason, an author intolerably prolix and vain.

<sup>31</sup> Mina, Minau, Minavè, signifies a fort, as Minavè the fort of Basra.

fort, and Moghostan is a district of the ancient Karmania, extending from Cape Jask to the north of Gomaroon<sup>22</sup>: he adds, that the heats are insupportable, and the climate most unhealthy; but a more particular circumstance he notices is, that the river, which rises in the neighbourhood, falls into the gulph at about two days' <sup>23</sup> journey from the city, and this river can be no other than the A'namis of Arrian, and the Andanis<sup>24</sup> of Ptolemy. The name of Ibrahim, which the river now bears, is evidently a personal derivative, and most probably from the sepulchre of some Mahometan saint in the neighbourhood; but the ancient appellation is preserved under a variety of forms, in almost every author who has treated of this country.

I insist upon these circumstances, because if Mina was formerly the principal place of the district, as it now is, it points out the reason why Nearchus pitched upon this station in preference to any other for a camp. He had here a communication with an inland town of eminence, from which he might hope to derive some intelligence of the position of the army, and open some means of communication with the king: and as the communication was actually effected afterwards from this very point, it is hardly imputing too much to the intelligence which we may reasonably suppose he obtained upon the coast.

He informs us himself, that he found the natives hospitably disposed, and the country abounding in every kind of supply, but oil. The disembarkation here is expressed in terms of joy, that intimate the previous confinement of the people on board

<sup>22</sup> Gambron, Niebuhr, Combru, Pietro della Vallé, Gambroon, Gameroon, Gomeroon, &c.

<sup>23</sup> From forty to fifty miles.

<sup>24</sup> There is in Marcian a Tuaneæ, rendered Addanius by Hudson, which he supposes may be the Anamis.

for many days : a grievance almost intolerable, considering the construction<sup>35</sup> of a Greek vessel, and a deliverance from which was the greatest of all refreshments. A naval camp was established here immediately, by drawing a line from the river to the beach, and fortified by a double rampart with a mound of earth, and a deep ditch, which seems to have been filled with water from the river. Within this inclosure, the vessels were hauled on shore, and all the proper measures adopted both for their security and repair. It was the intention of the commander to leave his people in this camp, under the command of proper officers, while he tried himself to obtain an interview with the king : but before we accompany him in this attempt, it will be necessary to consider the country around him with that which he was to penetrate, and the probable site of the Macedonian camp at the time.

It is easy to recognise the name of Ormuz in the Harmozeia of Arrian ; but we are not therefore to suppose, that the local circumstances of both are exactly the same. The present Ormuz is an island known to the moderns by the title of Gerun. Its appellation, derived from the neighbouring tract on the continent, is agreeable to an usage prevalent in the gulph of Persia, which we shall have occasion to notice as we proceed ; and the flight of the inhabitants from the continent to the islands, in cases of oppression or invasion, is to this day a

<sup>35</sup> Ulysses, in all his wanderings, never appears to have slept, *παρὰ πρυμνήσια νῆος*, in the after-part of the ship, when he could find another bed. In Homer's galleys there was an after-deck called *ἱκμῶν*, on which the steersman was elevated above the rowers in the waist. *πρυμνήσια* are properly the cables at

the stern, but perhaps the after-part of the vessel likewise ; whether, when they slept on board, *παρὰ πρυμνήσια*, they slept on the *ἱκμῶν* [deck], or under it, does not clearly appear. Either was bad lodging. *Odyss. N. l. 74.* Ulysses sleeps upon the deck.

settled practice, as we are assured by Niebuhr<sup>36</sup>. D'Anville finds two periods, when the Harmozians on the main might have fled to Gerun, and carried their name with them to their new abode. One in the beginning of the thirteenth century, when Bahud-din, a native chief on the coast, fled from an inroad of the Atabek Turcomans, who about that time established themselves in Pharsistan and Kerman<sup>37</sup>; and another in the year one thousand two hundred and seventy-three, when the descendants of Gengis-Khan were masters of the Persian empire<sup>38</sup>. To these two periods I must add a third: in the year one thousand four hundred and seven<sup>39</sup>; when Mahomet the son of Timour was sent down from Schiraz by his father to this coast, in order to subdue Mahomet Shah, the sovereign of Ormuz, Ormuz was at that time evidently on the continent<sup>40</sup>, for the son of Timour took seven fortresses which were the defence of the Shah's kingdom, and compelled him to fly to Geroum<sup>41</sup>, exacting even there from him a tribute of six hundred thousand dinars. This transaction proves, that the island was not yet called Ormuz in one thousand four hundred and seven; while it is almost evident that Gerun was the place of retreat for the inhabitants of the continent on these three different occasions; and, according to the observation of Niebuhr just mentioned, this is the custom of the coast. The fluctuation of this word in European orthography justifies much greater liberties in regard

<sup>36</sup> See Niebuhr under the head Abu-Schæhr.

<sup>37</sup> Persis and Carmania.

<sup>38</sup> Cheref-eddin, vol. ii. p. 418. French edition.

<sup>39</sup> Really one thousand three hundred and ninety-seven; for there is an error of ten years in the chronology of Cheref-eddin.

<sup>40</sup> Ormuz seems to be on the main previous to Timour's age. Ebn Haukel, p. 145.

<sup>41</sup> Geroum is called by Petis de la Croix in the margin, Gomeroon; but it should rather be the island: not but that Geroum and Gomeroon may be mutually connected, like Ormuz, on the main, and Ormuz the isle.

to names, than any which occur in this work \*. Ormus, Ormuz, Ormutz, Hormus, Hormoz, Hormuzd, Harmozeia †, Armozusa, Armoxusa, Armuza, are all applied either to the island or the neighbouring continent, and I conclude have all a derivation common also to Hormisdas, which is Oromasdes or Hormudsch, the good principle in the superstition of the Parsees; a name assumed by several princes of the fourth dynasty, and some of a later date. Mr. d'Anville ‡ has observed that there are four districts, two on the gulph and two inland, that take their titles from different Persian monarchs, Cobad †, Sabur, Darab †, and Ardeshir, that is, from Artaxerxes as he is styled in Greek, Cobad, Sapor, and Darab; but, perhaps, if we should judge these rather to have a derivation in common with the name of those kings, than to take a name from them, Armosa may be added as a fifth †, and related to Hormisdas or Oromasdes † by the same connexion. All this is, however, a speculation rather curious than necessary, and our concern is with the tract called Harmozéia by Arrian, Armooza by Ptolemy †, and with his Cape Armôzon, which Strabo † has marked

\* See Herbelot in Hormouz.

† It is worthy of notice, that Alfragani writes Harmuz with Ptolemy and Arrian. Gol. ad Alfrag. p. 112.

‡ Mem. p. 156.

D'Anville derives these divisions from Golius ad Alfraganum; but Niebuhr says, no knowledge of such a division now remains. See Gol. Not. ad Alfra. p. 115. Niebuhr, vol. ii. p. 166. French edition. Mr. Jones asserts the continuance of three of these names at least.

§ These names seem all to arise from the fourth dynasty of Persian race. Heylin Cosm. lib. iii. To this dynasty, perhaps, all the my-

thology and all the learning of the Parsees discovered by Anquetil du Perron may be referred.

¶ Thus Darab-chierd is Dario-certa. Pietro della Vallé, tom. vi. p. 130.

‡ It ought, however, to be noticed, that Armozéia is in Karmania, not in Persia.

§ See Schkard's Tarick Regum Persiæ, p. 115. He says, Hormos and Baharem were brothers of the race of Sassanides. Hormos gave name to Ormus, and Baharem to Bahrein.—But *quere*, for Bahr-cin signifies two seas.

¶ Ptol. p. 157.

‡ Strab. p. 765.

precisely as lying at the very point where the strait is narrowest. At this promontory I suppose the district of Arrian to commence ; how far it extended towards the north, or whether it comprehended Gomeroon (Bender-Abbassi) within its limits, cannot now be determined ; but there is sufficient ground to conjecture, that it terminated within the limits of the modern Moghostan at the river called Rud-siur by Pietro della Vallé, and extended inland to the foot of the mountains. Every where along this coast a range runs in a line at no great distance from the sea, inclosing the Kermesir, a narrow strip of level country rendered hot beyond measure, and unhealthy, from the want of circulation. As Harmozéia was a district of Karmania, in the same manner Laristan<sup>51</sup> and Moghostan are, in modern estimation, so distinct from Kerman, that the province can hardly be said to commence till you are past the mountains. Moghostan, or the land of dates, by its name implies the means of support, and though the air is unwholesome, according to modern accounts, the soil does not appear to be barren. The whole district was flourishing while the Portuguese maintained their commerce at Ormuz ; and Pietro della Vallé, in his time, found an English factory<sup>52</sup> established at Mina<sup>53</sup> for the purchase of silk. The whole of this coast is desolated at present by the distracted state of Persia ; and, according to Niebuhr, subject to Arab Scheiks, who have taken advantage of those

<sup>51</sup> Laristan, from Lar, a town much to the westward of Gomeroon, in the tract below the mountains. Pietro della Vallé retired to Lar, after a severe illness, which ensued upon the death of his wife, and had the good fortune to find there a Persian well skilled in physic. His route, if we were concerned with the interior of the country, is well worth pursuing. See *infra*.

<sup>52</sup> Or at least merchants.

<sup>53</sup> See Purchas, vol. iii. p. 1794.

The merchants at Mina signed the treaty with the Persians for the siege of Ormuz ; upon the signing of which they got leave to move their goods, and came down to the coast to Costack, a place in sight of Ormuz, the Kuhestek of Pietro della Vallé.

troubles to pass from the opposite coast, and establish petty governments from Ormuz to Busheer.

The bare mention of Ormuz is sufficient to attract our notice to the celebrated emporium of that name established in the isle of Gerun, which flourished to such a degree in the fourteenth and fifteenth centuries, as to excite the envy and jealousy of all the Arabian tribes on one side the gulph, and the king of Persia on the other. The trade with India, and perhaps with China, had in more ancient times been fixed at Maskat and Sohar on the Arabian side, and afterwards at Shiraff and Keish on the coast of Persia; but Gerun, the most barren island in the gulph, derived, from the advantage of its situation, a preference to all the other marts which had partaken of this commerce. This desolate spot is a rock, evidently formed by a volcano, the vestiges of which still remain on a mountain that divides almost the whole island in its greatest length. The soil is a white salt, hard enough to be used for building: the fort and the houses were constructed of no other materials. There is no spring or water but such as is saved from rain, and rain falls seldom; no plant or vegetable, but a few at the king's<sup>44</sup> palace set in earth, brought from the continent; and the Portuguese, to secure a supply of water, were constrained to maintain a fort on Kismis. The heat is intolerable: in summer, the inhabitants lie plunged in water for many hours; in winter, they sleep on the terraces of their houses. Yet even here could commerce fix her seat; and the Portuguese, who took it under Albuquerque in the

<sup>44</sup> The king's palace and garden, called Turun-bagh from Turun Shah, was on the south-west side of the island. Turun Shah was likewise an historian, and his history was translated by Texeira, part of which we have in English by Captain Stevens.



year 1507, kept possession of it till 1622, when it was again reduced under the power of Persia by Abbas the Great, with the assistance of the English fleet. It had become in the hands of the Portuguese an emporium second to none but Goa; and it is remarkable that they preserved the race of native kings, from the same policy which has made the English support nominal sovereigns in Bengal and the peninsula. When the place was taken, the last king was conveyed as a prisoner up to Ispahan through Lar at the time Pietro della Vallé was resident in that city. He had the generosity to communicate his kind wishes to the unfortunate prince; and, visiting Ormuz himself a few months afterwards, bears testimony to the bravery of the Portuguese in its defence. Abbas intended to annihilate the city and transplant the commerce to Gomeroon, which he thenceforth styled Bender Abbassi, the port of Abbas; but he broke his faith with the English, who were to have had half the produce of the duties for their assistance, and Bender Abbassi soon became deserted from the usual oppression of a despotic government. While Ormuz was the seat of commerce, it invigorated the Persian provinces which border on the gulph; and however its fall impaired the power of the Portuguese, its conquerors gained nothing by their success. The English commerce declined till they abandoned it from disgust, and the neighbouring coast of Persia sunk under its natural aridity. A few vessels still continue to frequent the gulph from the settlements in India, but the trade is of no great importance. In the ruin of Persia since the death of Nadir, an Arab with the title of Muli Ali Shah is master of Ormuz, as Niebuhr informs us; but his residence seems to be at Gomeroon, as I collect

from the journal of the Houghton " East Indiaman, which mentions a similar name at that city. This is the last account of this once celebrated mart; and in this situation it is likely to continue unless the Persian empire should revive, of which there seems no immediate prospect.

Ormuz<sup>56</sup> has two safe ports, one on the east and another on the western side; it is three leagues from the coast of Persia, and near four in circuit; according to Mr. Dalrymple, it lies in latitude 27° 4' 22" north.

After this digression we must return again to Nearchus, who was at the A'namis in the neighbourhood; and here, in consequence of the measures he had taken for inquiry, he had the satisfaction to find that the army had arrived in safety, and was not at a greater distance than five days' journey from the coast. A day's journey is still an Oriental measure, and may vary in its utmost difference from twenty to thirty miles. Taken at a medium, therefore, Alexander was now an hundred and twenty-five miles from the coast; out of this sum, if we be allowed to conduct Nearchus to Mina<sup>57</sup>, we have two days' journey to subtract from our uncertainty, and only seventy-five miles inland from Mina, upon which a doubt would remain. My reason for conducting Nearchus to Mina is not wholly conjectural; for, in the first place, it is the capital of the district, which would na-

<sup>56</sup> The date of this journal is 1755: Niebuhr was at Gomeroon nine or ten years later. If it be the same man, he had a long reign, considering the time he lived in. He was in some measure dependent on Nauzir Khan of Zar, but possessed Gomeroon, Ormus, L'Arek, and Kismis. See Ives. p. 202.

<sup>57</sup> There is a draft of the island, with the fortress, town, and king's palace, in Astley's

Voyages, i. p. 71.

<sup>57</sup> Niebuhr says Mina is only six leagues from the sea: but I depend upon Pietro della Vallé, who resided there some time, and had frequent occasion to dispatch messengers to the coast: but N. B. Six leagues is the expression of the translator. Niebuhr himself says, some leagues. See French edition, vol. ii. p. 165.

turally attract him; and, in the next, we actually hear that the commander of the district, upon the arrival of the fleet, flew up to the camp to anticipate the intelligence of its arrival. The seat of empire is subject to the caprice of the monarch in the east, and has frequently been changed; but in the provinces<sup>48</sup>, or subdivision of provinces, the principal town having generally risen from local convenience, is not so much exposed to fluctuation: this induces me to think, that a place like Mina was the ancient capital, as well as the modern. We are, then, to look for Alexander in Karmania, at some convenient spot three days' journey from this town.

We left him at Poora in Gadrôsia, which d'Anville<sup>49</sup> considers justly as the Pureg or Phoreg of the Nubian Geographer, and Arrian calls the capital of the province. The modern capital, according to Cheref-eddin, is Kidge<sup>50</sup>, and d'Anville has another Polreg<sup>51</sup>, or Forg, on the western side of Karmania, in which also he is justified by Al Edrissi, if I understand

<sup>48</sup> In Hindostan, Palibothra, Canouge, Agra, and Dehli, have been the seats of empire in different ages: but Lahor has continued unchangeably the head of a province. Ecbatana, Persepolis, and Susa, have all ceded in Persia to Ispahan; but, Candahar, Herat, Balk, Lar, &c. are still principal places.

<sup>49</sup> Geog. Ancienne, vol. ii. p. 283. written Fahrag, Fohreg, Pohreg, Puhreg, Puregh, Purch. In all Persian words, p and r are interchangeable. Fars is Persia. G, GH, and H, are all final aspirates, and hardly distinguishable. See Nub. Geog. p. 129.

<sup>50</sup> Vol. ii. p. 417.

Kidge becomes Kudj; from whence perhaps the Kutch of Europeans, and the Kutch Mekran of the Ayen Akbari; and is sometimes confounded with Tide, which is on the

coast. Petis de la Croix, from the historians of Gingis Khan, mentions that the army of that prince of ravagers almost perished in this province. Pet. de la Croix's Hist. of Gingis, p. 337. Tiz is a place on the coast in the bay of Churbar, and possibly Petis de la Croix has confounded the two.

Otter says, Kie or Guic, vol. i. p. 408.

<sup>51</sup> Called Purg or Furg by Pietro de la Vallé, vol. v. p. 361. Less difference would appear in all these names if they were written with the PH instead of the P, which letter, in other Oriental tongues as well as the Hebrew, is the same, D or D, with no other distinction but the point. Phorg, Phooorg, Phooereg, Phoooreh, pass easily into Poora, the Greek pronunciation of Πύρα by this method of writing.

him right, and by Pietro della Vallé, who was himself in Mogosthan. At Poora he was joined by Stasánor and Phrathernes from the upper provinces, who, divining the difficulties he must have encountered, hastened to his relief with provisions, and a convoy of camels and other beasts; the whole was distributed among the officers and their different troops as far as the supply would extend, and the army proceeded to Karmania as soon as it was recovered from its fatigues. The march was probably a procession of joy and triumph, for the army was not only crowned with victory, but delivered from famine; but that it was a pomp of licence, revelry, and voluptuousness, as painted by Plutarch and Q. Curtius, is a fiction, as Arrian assures us, not supported by Ptolemy, Aristobólus, or any other historian of authority. They both mention the exhibition of games and a solemn sacrifice in gratitude for the deliverance experienced. These were easily magnified into a Bacchanalian procession, by a fertile imagination, and exaggerated on the side of exultation, as much as the distresses in Gadrósia had been amplified by terror. That their sufferings were less than they are reported to be, appears from their future transactions; for there is no evidence of extraordinary weakness or diminution; the expeditions proceed as usual, and the future plans daily increase in the magnitude of their object.

If now, therefore, we cast an eye to the map, and consider the situation of Mina<sup>61</sup> and the Gadrósian Fohregh, we can hardly be mistaken in drawing a line through Giroft<sup>62</sup>, a town of Karmania, which will stand as a point of union between the fleet and the army. My reason for fixing upon Giroft, or some

<sup>61</sup> Mina lies in 26° 35' north latitude, according to Pietro della Vallé, vol. v. p. 397. It has two castles.  
<sup>62</sup> Djirift of Otter, vol. i. p. 311.

place in its neighbourhood lying on the same line, is, because of its agreement with the distance of an hundred and twenty-five miles almost to a fraction<sup>64</sup>, if d'Anville's map is correct. There is no town in Karmania, either upon this route or near it, except Valase-gerd<sup>65</sup> or Valase-cherd, which possibly has a better title to antiquity, if we may judge by its termination, for its final syllable is the same, though differently written, with that of Tigrano-certa and Pasa-garda<sup>66</sup>, both ancient cities; the objection to Valase-cherd is, its too great proximity to the coast. Now, it is remarkable, that Arrian, Strabo, Plutarch, and Curtius, none of them assign any name to the town where the interview took place, but Diodôrus Siculus fixes it at Salmûs, and adds, that Nearchus arriving when the king was in the theatre and exhibiting games to the army, he was introduced upon the stage, and requested to relate the account of his voyage to the assembly. Salmûs is a name so void of any collateral support, that the learned commentator<sup>67</sup> of Diodôrus abandons it in despair, and I have searched every authority in my possession without finding a similarity of name to ascertain its position. In a case of despair, I offer the following conjecture as a mere speculation (without building in the least upon it) for the amusement, I hope, not for the contempt of the reader :

<sup>64</sup> It measures almost, as exactly as the opening of the compasses will give, one hundred and twenty-five miles Roman, of seventy-five to a degree; and this, compared with the road distance, would amount to one hundred and twenty-five miles British, as near as precision itself could demand.

<sup>65</sup> Written both ways by the Nubian Geographer; where observe, -gerd preserves the relation with Pasa-garda, and -cherd with Tigrano-certa. This termination signifies

Fort, Town, or City, like the modern terms -abad, -patam, -poor, &c. Fat-abad, Jehannabad, Melia-poor, Masuli-patam, &c.

<sup>66</sup> Pasa, written Phera and Besa, which signifies the north-east wind; because it is cooled by that wind in a hot climate. *Geogr. ad Alfragan*, 114.

<sup>67</sup> Wesseling. *ad Diodor. lib. xvii. p. 243.* Σαλμύς. Urbis nomen quam in Carmania fuisse ex Arriano conficiat, lib. vi. 28. Ab aliis neglectum.

The Nubian Geographer<sup>68</sup> mentions MAAUN<sup>69</sup>, a small city, but much frequented by merchants, at one station, or five and twenty miles, distance from Valase-cherd; and it is, I conclude, the same as d'Anville's De-Maum which stands between that town and Giroft. Is it, then, too much to say, that, in the SAL-MOUN-TI of Diodorus, we discover MAAUN? I know not the origin of d'Anville's De- more than the SAL- of Diodôrus; but Sal in Hebrew, and, if I am rightly informed, in Arabic or Persic, has two significations; by one it imports the *shelter* of a tent<sup>70</sup> or house; by the other, a *rampart*. Would it not then, in either sense, apply? as first, the *camp* at Maaun, and secondly, *Fort* Maaun; or, if it should be said I take advantage of a Greek<sup>71</sup> inflexion to obtain MOUN-, I must observe, that words of this form, though they have not the letter N in their first appearance, always assume it by inflexion, and have it constantly implied. I give this merely as a speculation, without pretension to Oriental learning; but I am persuaded that an Orientalist who would pursue inquiries of this sort would find his curiosity amply repaid. I shall draw no consequence from it, though I prefer Maaun on this account, but fix the interview at Giroft, in which I adhere to the corresponding distance, and the opinion of d'Anville. If it should hereafter appear that Diodôrus has, under such a disguise, preserved the name of this place, he has one offence the less in his

<sup>68</sup> P. 130. Canat-Alsciam, hinc ad MAAUN urbem parvam sed commerciis minime infrequentem, statio. Ab hac ad urbem Valasegerd, quæ et Valasecherd dicitur, statio.

<sup>69</sup> Maaoun is noticed also by Ebn Haukal, p. 139. 143.

<sup>70</sup> סללה, Sallah, a rampart, from סל

לץ, Sal Tzal, to shade or shelter, as a house or tent. Parkhurst in voce.

<sup>71</sup> ΣΑΑΜΟΥΣ, pronounced SALMOOS, and formed like Pessinus Pessinuntis, Selinus Selinuntis; written in Latin originally, Pessinuns, Selinuns, and so Σαλμῶν; Σαλμῆντος.

barren account of this expedition. Giroft is styled the capital<sup>72</sup> of Karmania by Petis de la Croix in his commentary on Cheref-eddin; which however it is not, for Seirdgian is the capital: he adds, that it is four days' journey from Ormuz, and lies in latitude<sup>73</sup> 27° 30'. It is noticed by Golius as a large and pleasant place, abounding in corn, fine fruits, and good water, and much frequented by the caravans; it is a place also of such importance, that when Mirza Mehemet, the son of Timour, invaded the kingdom of Ormuz, he made it a post<sup>74</sup> for his brother, who commanded one of the divisions of the army. According to the Nubian Geographer, there is an inland Hormoz-regis, or Hauz, lying between Phoreg and Giroft<sup>75</sup>, which would induce a conjecture that, at the time of Mirza Mehemet's invasion, the kingdom of Ormuz extended inland, or originated beyond the mountains, which line the coast; and that the name passed in the first instance from the inland town to the coast, and then from the coast to the island. If this conjecture be founded, it corresponds admirably with Arrian, for Nearehus found no city, but a district called the Harmozeian country, and probably the seat of government was at that period the inland Hormoz, existing as a kingdom or province of Ormuz, nearly in the same manner as in the age of Timour. The march of Mirza Mehemet's army in four divisions, for the invasion of this kingdom, throws<sup>76</sup> much light on this subject, if it were neces-

<sup>72</sup> The Nubian Geographer. Giroft autem magna est habetque in longitudine duo fere milliaria, p. 129.

<sup>73</sup> I believe Petis de la Croix's latitudes are from Abu'lfeda. See Cheref-eddin, vol. ii. p. 418.

<sup>74</sup> Golius ad Alfraganum, not. p. 118. Distant one day from Harmuz; if so, it is the inland Ormuz.

<sup>75</sup> There is an error in the Nubian Geographer, who says, first, that Hormoz is between Phoreg and Giroft, and afterwards that it is to the west of Giroft, which is impossible. D'Anville has placed Hormoz between the two, and therefore probably read *Oriente* for *Occidente*, the east for the west.

<sup>76</sup> Cheref-eddin, vol. ii. p. 417.

sary to pursue it farther. One circumstance, however, must not be omitted, which is, that the position of Giroft depending on the Gadrôsiān Poora, or Phoreg, it is remarkable that the Nubian Geographer<sup>77</sup> places Phoreg at the commencement of the great desert which extends to Segestan, and at two hundred and ten miles<sup>78</sup> distance from the capital of that province. It is the lower part of that desert which Alexander had just passed; and this furnishes an additional proof to the direction of his march, and a stronger reason for conducting it to Giroft instead of Seirdgian the capital, because, if he had inclined to the north, his course would still have been through the same desert.

Upon the arrival of the army in Karmania, intelligence was received that Philip, the new-appointed satrap of India, had been assassinated by the native troops in his pay, and his death revenged by the Macedonians. Eudêmus and Tâxiles were ordered to take charge of the province till a new satrap should be appointed. Stasânor, the satrap of Aria and Drangiâna; Pharasmânes, the son of Phrataphernes, satrap of Parthia and Hyrcania; Cleander, Sitalces, and Herâkon, with a considerable force, and the army of Parmenio out of Media, all joined Alexander in Karmania, where Cleander and Sitalces, being accused of oppression and sacrilege, were tried and executed. Crâterus also arrived with the elephants and heavy baggage, having experienced none of the difficulties in his march through Arachôsiâ<sup>79</sup> and Drangiâna<sup>80</sup>, which Alexander had encountered

<sup>77</sup> P. 129.

<sup>78</sup> His account is not clear.

<sup>79</sup> It is probable he fell into the route from Candahar to Yezd, which is still the course of the caravans. See Steele's Journey in Pur-

chas, which, if detailed, would have thrown great light on this march, and the country in general.

<sup>80</sup> See d'Anville Geog. Anc. p. 287. vol. ii.



in Gadrôsia ; and yet by a view of the map, and a reference to the geographers, we can hardly discover the means of his avoiding some part of that desert on the east of Karmania, which the Nubian Geographer says<sup>11</sup>, is the largest in the world. All these circumstances, though foreign to the voyage itself, are necessary to be mentioned at least, because they account for the delay of Alexander in the province, where so much business<sup>12</sup> appears to have been transacted, besides the recovery of his troops after the fatigue and distress of their march.

Thus having considered the march of the army and its present position, I shall next examine the dates. Nearchus reached the A'namis on the twentieth of December, and it is no matter of difficulty to shew the correspondence of that date with the movements of the army. It has already been proved that Alexander left Pattala in the latter end of August, see p. 181 ; and before the conclusion of that month, there is sufficient evidence to shew, that he had passed the country of the Arabies and Orîtæ, and had entered Gadrôsia. The proof of this is, a circumstance mentioned of his encamping in that province, after a distressful march upon the bank of a torrent, which swelled suddenly from rain that had fallen in the mountains, and swept away all the baggage of those who, for the convenience of water, had pitched their tents too near the course of the stream. This fact is recorded both by Strabo and Arrian ; and it proves that, though no rain falls in Gadrôsia, the solstitial rains were not yet over in the mountains which encircle that province on the north. Now Strabo says, that the rains end about the rising

<sup>11</sup> P. 128.

<sup>12</sup> At Poora there was also the appointment of Siburtius to the satrapy of Apollophaneæ, over the Orîæ.

of Arcturus<sup>83</sup>, that is, the second of September; and consequently the army must have been in Gadrôsia, and suffered this calamity, in the latter end of August. If, therefore, we add another fact to this, upon the authority of Arrian, that the army was sixty days in passing Gadrôsia, we bring its arrival at Poora to the end of October. The business transacted here and in Karmania may reasonably be supposed to have occupied six weeks, to which an additional circumstance, not noticed by the historians, must be added, that is, the remounting of the cavalry; for all the horses had perished in the desert. Thus far a comparison of facts would authorise the fixing of a date to the first or second week in December; but we have a positive proof of the season much stronger; for when Alexander, after receiving Nearchus, recommenced his march to the northward, he dispatched Hephêstion, with the greater part of the army, the baggage, and the elephants, to proceed along the sea-coast of Karmania, because it was now WINTER<sup>84</sup>, and the climate<sup>85</sup> was there milder<sup>86</sup>, and supplies<sup>87</sup> were more easily to be procured: that is, Hephêstion passed the mountains, and traversed the modern Moghostan<sup>88</sup> and Laristan, or Kermesir, while

<sup>83</sup> Strabo, p. 691. Usher, from Euctemon, says on the fifth of September. See Ephemeris de Anno Solar. Maced.

<sup>84</sup> Arrian, p. 270.

<sup>85</sup> "Towards the west of Jireft (Giroft) snow falls." Ebn Haukal, 142.

<sup>86</sup> ἁλιωτά τε ἦν. See a very long and angry note of Gronovius's upon this word, because Facius and some others had read, ἱλιωτά τε ἦν, ibid.

<sup>87</sup> If we suppose Hephêstion to have passed the mountains at Mina, which is probable, he marched to Lar the same road by which

Pietro de la Vallé was carried sick in a litter to the same town. See vol. v. sub fine.

<sup>88</sup> Niebuhr says, from Bender Abbâssi to Delam; it is an arid plain called Kermesir, or the hot country, by the Persians. Vol. ii. p. 143. English edition. Pietro de la Vallé confirms this, by mentioning that it seldom rains at Lar, except a little in May. May is the coldest month. Vol. vi. p. 20. et seq. Strabo is very precise in his agreement with Niebuhr, p. 727; for he says, the sea coast along the gulph, as far as the river Oroâtes, is barren, hot, and exposed to violent winds for

Alexander, with the remainder of the forces, proceeded inland to the northward of the mountains, and directed his course to Pasagarda. The direct mention of winter in this passage corresponds so precisely with the twentieth of December, which the narrative of the journal produces, that there cannot possibly be an error of more than a few days. Such an error, I have before intimated, must lie on the side of excess; and I am disposed to take off the ten days and fix Nearchus's arrival at the A'namis on the tenth of December, in the year three hundred and twenty-six before the Christian æra, in the eleventh year of the reign of Alexander.

The pleasure of being once more on land, after all the distresses they had experienced, is painted in strong colours by Nearchus<sup>90</sup>; and as they were now in a friendly country, without apprehension either of famine or danger, the people were soon dispersed over the neighbouring tract, either from curiosity, or a desire of supplying their several wants. One of these parties accidentally fell in with a straggler, whose dress<sup>91</sup> and language discovered him to be a Greek; tears<sup>92</sup> burst from their eyes upon seeing once more a native of their own country, and hearing once more the sound of their own language. Inquiries

three hundred or four hundred stadia inland: from thence, a fine country to the north, for eight thousand stadia!

<sup>90</sup> Arrian, p. 348.

<sup>91</sup> χλαμύς.

<sup>92</sup> The classical reader will call to mind the same natural sentiments attributed to Philoctetes by Sophocles, l. 222.

Ποίας πατρός ὑμᾶς ἂν ἡ γένους ποτὲ

Τύχοιμ' ἂν ἱππῶν; σχῆμα μὲν γὰρ Ελλάδος

Στολῆς ὑπάρχει προσφιλεστάτης ἑμῶν.

Φωνῆς δ' ἀκῶσαι βέλομαι.

4

Of what clime? what race?

Who are ye? Speak; if I may trust that garb,  
Familiar once to me, ye are of Greece,  
My much-lov'd country: let me hear the sound  
Of your long wished-for voice.

FRANCKLIN.

And afterwards,

Ω φίλτατον φῶτμα. Φῦ τὸ καὶ λαβῆν

Πρόσθεγμα τοῖς δ' ἀνδρὶ ἐν χρόνῳ μακρῷ.

Oh happiness to hear!

After so many years of dreadful silence,  
How welcome was that sound! FRANKLIN.

commenced with the eagerness natural to their distress, when they learnt that he had not long left the army, and that the camp was at no great distance. They instantly hurried the stranger with all the tumult of joy to Nearchus; in his presence, the same happy discovery was repeated, with assurances that the king was within five days' journey, and that the governor of the province was upon the spot, from whom farther intelligence might be obtained.

This circumstance of good fortune occurred on the day of their arrival. Nearchus instantly determined to undertake the journey, and the next day ordered the ships to be drawn on shore, and the camp to be fortified. While he was engaged in these transactions, the governor, who was not unacquainted with the anxiety of Alexander on account of the fleet, and thinking to recommend himself by carrying the first intelligence of its arrival, hurried up to the camp by the shortest route, and gaining admittance to the king, informed him that the fleet was safe, and that Nearchus himself was coming up in a few days. The joy of Alexander may be readily conceived, notwithstanding he could scarcely allow himself to give full credit to the report. Impatience succeeded to his doubts; day passed after day without confirmation of the fact; and at length when due allowance had been made, and calculation was exhausted, he dispatched parties different ways in search of Nearchus, either to find him out if he were upon his road, or, if found, to protect him from the natives: but when several of these parties returned without success, concluding the governor's information was a delusion, he ordered him into confinement, not without the severest reproaches for rendering his vexation more acute from the disappointment of his hopes.

In this state of suspense he continued for several days, manifesting by his outward deportment the anguish he suffered in his heart. Nearchus, however, was actually on the road; and, while he was proceeding with Archias and five or six others in his company, fortunately fell in with a party from the army, which had been sent out with horses and carriages for his accommodation. The admiral and his attendants, from their appearance, might have passed unnoticed. Their hair long and neglected, their garments decayed, their countenances pale and weather-worn, and their persons emaciated by famine and fatigue, scarcely roused the attention of the friends they had encountered. They were Greeks, however, and of Greeks it was natural to inquire after the army, and where it was now encamped. An answer was given to their inquiry; but still they were neither recognised by the party, nor was any question asked in return. Just as they were separating from each other, "Assuredly," says Archias, "this must be a party sent out for our relief; for on what other account can they be wandering about the desert? There is nothing strange in their passing us without notice, for our very appearance is a disguise. Let us address them once more, and inform them who we are, and learn from them on what service they are at present employed." Nearchus approved of this advice, and approaching them again, inquired which way they were directing their course? "We are in search of Nearchus and his people," replied the officer;—and "I am Nearchus," said the admiral; "and this is Archias; take us under your conduct, and we will ourselves report our history to the king." They were accordingly placed in the carriages, and conducted towards the army without delay. While they were upon their progress, some of

the horsemen, impatient to carry the news of this happy event, set off for the camp to inform the king, that Nearchus and Archias were arrived, with five or six attendants, but of the rest they had no intelligence. This suggested to Alexander, that perhaps these only were preserved, and that the rest of the people had perished, either by famine or shipwreck; nor did he feel so much pleasure in the preservation of the few, as distress for the loss of the remainder. During this conversation, Nearchus and his attendants arrived. It was not without difficulty that the king discovered who they were, under the disguise of their appearance; and this circumstance contributed to confirm him in his mistake, imagining that both their persons and their dress bespoke shipwreck, and the destruction of the fleet. He held out his hand however to Nearchus, and led him aside from his guards and attendants, without being able to utter a word; as soon as they were alone, he burst into tears, and continued weeping for a considerable time; till at length recovering, in some degree, his composure, "Nearchus," says he, "I feel some satisfaction in finding that you and Archias have escaped; but tell me where, and in what manner, did my fleet and my people perish?" "Your fleet," replied Nearchus, "is all safe, your people are safe, and we are come to bring you the account of their preservation." Tears, but from a different source, now fell much faster from his eyes; "Where, then, are my ships?" says he. "At the A'namis," replied Nearchus: "all safe on shore, and preparing for the completion of their voyage." "By the Libyan Ammon, and the Jupiter of Greece, I swear to you," rejoined the king, "that I am more happy at receiving this intelligence, than in being the conqueror of all Asia; for I should have considered the

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“ loss of my fleet, and the failure of this expedition, as a counterbalance to all the glory I have acquired.”—Such was the reception of the admiral, while the governor, who was the first bearer of the glad tidings, was still in bonds : upon the sight of Nearchus, he fell at his feet and implored his intercession. It may be well imagined that his pardon was as readily granted as it was asked.

The joy was now universal through the army ; a solemn sacrifice was proclaimed in honour of Jupiter the preserver, of Hercules, of Apollo the averter of destruction, of Neptune, and every deity of the ocean : the games were celebrated, and a splendid procession exhibited, in which Nearchus was the principal ornament of the pomp, and the object which claimed the attention of every eye. Flowers and chaplets were wreathed for his head, and showered upon him by the grateful multitude, while the success of his enterprise was proclaimed by their acclamations, and celebrated in their songs. At the conclusion of the festival, the king informed Nearchus, that he should no longer expose him to the hazard of the sea, but send down some other officer to conduct the fleet to Susa. “ I am bound to obey you,” replied the admiral, “ as my king, and I take a pleasure in my obedience ; but if you wish to gratify me in return, suffer me to retain my command, till I have completed the expedition. I shall feel it as an injustice, if, after having struggled through all the difficulties of the voyage, another shall finish the remainder almost without an effort, and yet reap the honour of completing what I have begun.” Alexander, scarcely permitting him to conclude his request, granted all that he desired, and sent him down again to the coast, with a small escort ; not supposing that there was any

danger in the neighbourhood of the army, or in a country which seemed to be sufficiently subdued : but in this he was mistaken ; the Karmanians resented the deposition<sup>22</sup> of their satrap, and had in consequence taken up arms, and seized some of the strong places in the province ; while Tlepólemus the new-appointed governor had not yet had time to establish his authority. It happened, therefore, that Nearchus encountered two or three parties of the insurgents on his march, and reached his destination at last, not without considerable difficulty. Upon joining again the companions of his voyage, he sacrificed to Jupiter the preserver, and exhibited the usual games<sup>23</sup> for his success.

The interview of Alexander and Nearchus needs no comment ; but I cannot set the fleet afloat again till I have observed, that there is nothing in the original to contradict the conjecture I have made, that Nearchus took the route of Mina to cross the mountains, in his way to Giroft ; that he had passed them, and was on his fifth day's journey, when he met with the party which conducted him to the army ; and that the natives he encountered on his return were probably straggling bodies who had secured themselves in the passes above Mina<sup>24</sup> ; it ap-

<sup>22</sup> See a note of Gronovius's upon *τιτελι-  
τίκη*, on this passage : who proves, that it  
does not mean "put to death," but "de-  
posed," p. 352.

<sup>23</sup> The king celebrated an *ἀγὼνα μυσικόν*  
καὶ γυμνικόν ; Nearchus's was only *γυμνικόν*.  
The *μυσικόν*, or trial of mental talents, seems  
always to have made a part of Alexander's  
games ; the *γυμνικόν*, that is, the trial of bodily  
strength, or address, was suitable to the situ-  
ation of Nearchus ; he had probably no *μυσικοὶ*,  
bards, orators, or musicians in his company.

<sup>24</sup> Niebuhr writes this name Minau ; and

says it is some leagues from the coast. He  
did not visit it ; and therefore his distance  
must be from report. Vol. ii. p. 142. Eng.  
edition. But I have no direct authority for  
fixing either Mina or the A'namis precisely.  
If d'Anville is correct, the site I give for the  
river is too much towards the south ; and if I  
am mistaken, the measures of Arrian mislead  
me. His error, if proved, must lie between  
Neóptana and the A'namis. Some of our  
English officers who have been at Gomeroon  
must be able to determine the position of the  
river Ibrahim.



pears likewise that the strong posts they had seized were in the same part of the country, and perhaps occupied with a view of intercepting the communication between the army and the coast.

By rescinding ten days from the journal, I brought the fleet to the A'namis on the tenth of December; and if we allow Nearchus to have set out on the thirteenth for the camp, ten days for his journey, and three days for his continuance there, brings our account to the twenty-sixth: he did not, however, sail immediately on his return; his sacrifice and his games occupied one day at least; the launching of his vessels and preparation for sailing may be supposed to employ two more; so that there can be no material error in assuming a date of some importance, the first of January in the year three hundred and twenty-five A. C. for his departure from the A'namis. We may conclude, also, that Alexander and Hephêstion proceeded on their separate routes<sup>95</sup> a few days previous to this date; and this supposition will be sufficient to justify Arrian's assertion, that the march of Hephêstion commenced in WINTER.

✓ OARACTA  
ISLAND.  
January 1.  
A. 325.  
First station.

The fleet is now to take a new departure with the commencement of the new year; and the first day's progress is nearly nineteen miles, to the island of Oaracta<sup>96</sup>; in the course of which, a desert island was seen called O'rgana, an island which I am now convinced corresponds with the modern Arek or L'Arek<sup>97</sup>, contrary to the supposition inserted in the former edition, where I had imagined it to be Ormuz. Whether there

<sup>95</sup> These two routes join again, according to Pietro della Vallé, within a short distance from the modern Shiraz. Vol. v. p. 351.

<sup>96</sup> Dajism, Djes Drás, of Niebuhr. Kismia, Khesem, written Queixomo by the Portuguese.

<sup>97</sup> L'Arek is one league and a half from Ormuz. Cutler, p. 85. D'Anville makes it larger than Ormuz; but M<sup>c</sup>Cluer was on shore on it, and makes it less. Niebuhr writes it. Laresdj.

is any connexion between the names of Oreg and Oregana, which I had conceived to be the true orthography of O'rgana, I shall not presume to determine; but I am persuaded, by the suggestion of the venerable Professor Heynè<sup>28</sup>, and by a reference to the course of the fleet in consequence of his advice, that my former arrangement was erroneous, and that the assumption of O'rgana for Arek solves many difficulties in regard to the measures assigned to this part of the navigation.

O'rgana is described as a desert island by Arrian, and continues so to this day. It is visited sometimes by the Arabian corsairs, who frequent the gulph for the purpose of fishing or piracy. Pietro della Vallé mentions landing here with a party of English from the ship he was on board, and adds, that they returned loaded with game and goats. Even this minute circumstance bears a resemblance to the report of Arrian, who notices goats on other uninhabited islands in this sea. Tombs and places of sepulture likewise occur, which may have been erected by fugitives from either coast, who take refuge on the islands when they are oppressed on the continent; and as these are built of more lasting materials than the houses of the natives on either side, it is not improbable that an appearance of this sort may have given rise to the fable of the tomb of E'rythras, from whom the sea is supposed to derive its name. His sepulchre is placed by different authors at Tyrinè and Oaracta; and if the same circumstance occurred there, or in other islands

<sup>28</sup> Professor Heynè was the first to recommend the voyage of Nearchus on the continent, in the Gottingen Journal. His criticism on this part of the work was derived from the learned Heeren, whose geography of the Gulph of Persia I have never seen; but I had

the satisfaction to learn from the communication of the Professor, that, except in this one instance, and another respecting the isle of Angar, my arrangement of the whole navigation was in correspondence with Heeren's.

in the gulph, his tomb might easily be multiplied in proportion.

Unfortunately, modern scepticism has destroyed the credit of King Erythras. It is now an opinion generally received, that the Red Sea is the Idumæan Sea, taking its name from Edom<sup>99</sup>, or Esau, the Arabian patriarch; and Edom signifies *red*<sup>100</sup>. The Arabians were doubtless the first navigators of the Indian ocean, and as they entered that sea by passing the straits of Bab-el-mandeb<sup>101</sup>, they carried the name of the Red Sea, from whence they commenced<sup>102</sup> their course, to the utmost extent of their discoveries. Hence the Indian Ocean received the title of Red; and the Greeks, who translated every thing rather than introduce a foreign word, made it the Erythræan Sea. Not contented, however, with this, they usually found a god, a hero, or a king, whose name or story must be connected with

<sup>99</sup> אֶדוֹם. Edom Hebraicè rubrum significat ut testatur Moses. Genes. xxv. 30. Nec vero est absimile quod hodie docti contendunt mare Rubrum inde esse dictum. Nam à mari Rubro allui terram Edom vel ex Scriptura compertum. Vid. i. Reg. ix. 26. דָּם, Dham. Sanguis ab אֶדוֹם per aphæresin. Bochart, vol i. p. 769.

See Shaw, 447. Edom and Souph.

Niebuhr, vol ii. p. 299, rejects the idea of Im-suph from Sufo, and approves *Edom*.

King Solomon made a navy of ships in Ezion Geber, which is beside Eloth on the shore of the Red Sea, in the land of Edom. יַם-סוּפִי, Im-suph. *The weedy Sea* is the term here used to express the Red Sea, and appears properly applied by the account of other authors. See Parkhurst in voce. But there is another derivation, signifying an *end* or *extremity*; and perhaps, therefore, Im-suph may mean one of the heads or bays of the Red Sea, as divided into two parts at its northern extremity. See

Questions of Michaelis. Niebuhr.

<sup>100</sup> The Arabs, or at least the Orientals, delight in these appellations. Thus, the Euxine is the *Black Sea*, the Propontis is the *White Sea*, the Mediterranean is the *Blue Sea*, the Indian Ocean the *Green Sea*, the Caspian the *Yellow Sea*. Welford, p. 9.

<sup>101</sup> The gate of death, or mourning.

<sup>102</sup> I cannot cite my authority, but I know there is evidence to shew, that the vast country of Siberia derives its name from a village called Sibir; near which the Russians first entered that country.

So likewise the Greeks, regarding their own means of approaching the ocean by the straits between Calpè and Mount Atlas, call the whole circumambient sea of the world the Atlantic Ocean. See Aristotle de mundo, c. 3. ὅτι καὶ ἡ σύμπασα μία νῆσός ἐστι, ὥστε τῆς Ἀτλαντικῆς καλεωμένης θαλάσσης, περιγυρομένη. Geoner de Navig. extra Col. Herc. p. 421.

the derivation; and hence we have E'rythras for the present purpose. But Agathárchides supposes that the Sea of E'rythras and the Erythréan Sea are distinct, and that the Sea of E'rythras more particularly belongs to the Gulph of Persia. His commentators do not assent to this position, but it must be confessed that the mythology of E'rythras is usually assigned to that sea; the derivation, however, of the whole is more natural from Edom or Red, than any other origin. But a second<sup>103</sup> foundation for this term has been adopted by some modern geographers, which is entitled to consideration: for it has been observed that the Porphyry Mountains, which line the western coast of the Gulph of Arabia from Suez to a considerable extent, exhibit a splendid redness from the reflexion of the sun: and as the navigation commenced from Suez or Arsínöe, it is not unreasonable to suppose the mariners carried this name with them from the appearance which first occurred, and extended it to the ocean with which this gulph communicated.

We are now to attend Nearchus in the prosecution of his voyage, from the river A'namis or Ibrahim<sup>104</sup> up the Gulph of Persia; and by viewing the position of O'rgana or Arek in the different charts, a sufficient reason will appear why it is noticed by Nearchus, for his course is directed to Oaracta, still called Broct or Vroct by Texeira, which is known also to the moderns by the name of Lapht or Left from the principal town, and

<sup>103</sup> A third source of this appellation has been imagined from Im-suph, the Hebrew name which signifies the weedy sea; and there is a weed still called Sufo by the Abyssinians, which is employed in dyeing, and affords a most beautiful red colour, but not durable. See a tract. called, A. Relation of the Nile,

republished in 1791, seemingly to discredit Bruce as the first discoverer of the sources of that river.

<sup>104</sup> This river is more apparent in the earlier than the later maps; it is written Braimi and Obremi by the Portuguese.

sometimes styled Gezirat Drâs, or Long Island <sup>105</sup>, from its shape. It is written Ouoroctha, that is, Woroctha by Ptolemy, Oracla <sup>106</sup> by Pliny, which is a manifest corruption for Oracta, and Doracta by Strabo; but the appellation by which it is most generally known is Kismis, the Queikomo of the Portuguese, possibly from its produce of Kismis, which is a grape <sup>107</sup> without seeds. Arrian observes that vines, corn, and date trees, were found in this island; and vessels from different parts of the gulph are still said to lade raisins in its ports.

The course from the river A'namis to Oaracta is three <sup>108</sup> hundred stadia, or something less than nineteen miles; a distance that does not answer indeed to the actual measurement, which requires an allowance of more than forty miles; but still it reconciles the courses of the following days, and renders the journal more consistent upon the whole than any other arrangement which presents itself. The position of Arek in the map will immediately shew why it is noticed, for it lies directly in the track from the A'namis to Oaracta, and was most probably visible <sup>109</sup> from the coast, so as to form a point of direction to the navigators. Oaracta itself also is an object of such magnitude, that if it has any high <sup>110</sup> ground, it could not fail of attraction.

✓ <sup>105</sup> Isle Longue, as it is rendered in the French edition of Niebuhr, tom. ii. p. 161. Amsterdam edition, p. 185, and 268.

✓ <sup>106</sup> The commentators who knew nothing of Oracla, corrected it Organa; but Pliny himself made them two different islands, for he says, *Organa habitat tantum aquosa*. I do not know whether Arek has water or not, but that it is not Oracla is self-evident. See Strabo, p. 767. Salmas. 1180.

<sup>107</sup> Their official name in England is Sultana or Sultanic grapes.

<sup>108</sup> Perhaps if I could fix the position of the river Ibrahim precisely, the distance might accord.

✓ <sup>109</sup> This is not certain, for Mr. Jones says, one of the names of Arek is Jezeeret il bareek, Low Island.

✓ <sup>110</sup> Mr. Jones gives the name Jezeeret il defauz in Persic, Long Island, which is the Dsjesiret dras of Niebuhr; and Jezeeret ul tooil, which is the same in Arabic, and which answers to the Dsjesiret Tauile of Niebuhr.

It is, says Nearchus, eight hundred stadia, or fifty miles, in extent, which is short indeed of the length assigned to it in our modern charts, but possibly the whole that was seen of it by Nearchus; and here was the fabulous tomb of King Erythras, conformable to the mythology of the Greeks.

I cannot leave these islands without noticing that the A'ndanis of Ptolemy, which answers to the A'nanis<sup>m</sup> of Arrian, corresponds precisely with the arrangement I have now assumed<sup>m</sup>; and this is the more remarkable, as his islands in the gulph are in general as much misplaced as in the ocean. I'chara, Tylos, and A'rathus, are brought down far too much to the south; and Arákia, which resembles Arek, but is in reality the L'Ara of the Portuguese, the Busheab of our English charts, is carried too far to the north. Tylos and A'rathos, which are the two islands of Bahrein, the seat of the pearl fishery, are converted into Tyrus and A'radus by Strabo; and both names derived from the Tyrus and A'radus<sup>m</sup> on the coast of Phénicia, by the Tyrians, whom he supposes to be the navigators of this gulph, and the founders of colonies in these islands. The whole is probably a fiction raised on the similarity of names, and is as consistent as the Greek mythology, which connects Média with Medça, and Persia with Perseus,

<sup>m</sup> In a map of Sanson's, derived from the Portuguese writers, I found the place of the Anamis occupied by a river called Tabo: is not this Arabic, T'Ab, *the river*? The situation answers correctly, and the distance much better. I am not satisfied that I have obtained the true position of the A'nanis, or Ibrahim; but no where between Elbours and Gomeroon can I fix a point that will coincide with the distance Arrian gives from the A'na-

mis to Oaracta, and yet it must be confined within these limits.

<sup>m</sup> Busheab is written Abu-schaib, like Busheer, Abu-scheer; and Abu-schaib is equivalent to Sheik-schaib, the name it bears in Niebuhr.

<sup>m</sup> Strabo, p. 766. Niebuhr assigns the name of Arad to one of the isles of Bahrein at the present day.

The point of Kismis, which we suppose the fleet to have reached, cannot be far distant from a fort occupied by the Portuguese while masters of Ormuz, which was necessary for supplying them with water, and which they defended bravely, under the command of Rui Freira, against the forces of Persia, till the English<sup>114</sup> joined in the attack with their artillery. The officer in command here, when Nearchus arrived, was Mazénes<sup>115</sup>, a Persian, who offered himself voluntarily to take charge of the pilotage, and upon the acceptance of his services he came on board, and did not quit the fleet till after its arrival at the Pasitigris.

—  
OARACTA.  
January 2.  
Anchorage  
2d.  
Day 2, or 93.  
—

The following course from this point to a second anchorage in the same island, which from mention of an islet in the offing must be the Angar or Angan of our modern charts, seems to require a course longer than is assigned by the journal of twelve miles and a half; and this is the more extraordinary, as the measure of two miles and a half given for the distance between Angar and the coast, is as correct as the corrected chart of M'Cluer. This islet, as the journal informs us, was inaccessible, and sacred to Neptune; inaccessible, perhaps, from some native superstition, like that attending the retreat of the Nereid in the Indian Ocean, and sacred to Neptune in a sense we do not understand. The Greeks attributed the names of their own deities to those of other nations, adorned with similar symbols; and as there is a conspicuous tomb<sup>116</sup> on this spot at present, it

✓<sup>114</sup> In the year one thousand six hundred and twenty-one, and when P. della Vallé was here the following year, he was well received by the English, who caroused all night, and formed a hunting party for him the next day, on the island of L'Arck.

<sup>115</sup> Called Amazénes by Strabo, p. 767, sufficiently confuting his own assertion, p. 732; where he makes Nearchus say, he had no guide: but the passage is suspected.

<sup>116</sup> M'Cluer, Lieut. Cant.

This is perhaps, what there is on most of

is by no means impossible that the representations on its walls, if antique, might still unravel the superstition alluded to in the Greek Neptune<sup>17</sup>.

Nearchus makes the island of Oaracta fifty<sup>18</sup> miles long, which Mr. d'Anville considers as specifying that part of the coast only which was passed by the fleet; but this solution is not justified by the text, and in reality no great allowance is necessary, the charts make it short of a degree, and a circumstance which occurred on departing from Angar, prevented the western extremity from being noticed: we might rather have expected, perhaps, that the fleet should have navigated the channel between Kismis and the main, than stand out to the southward of the island in the open sea; and such a course as this we have seen preferred upon approaching the river A'rabis; but by making the eastern point of Kismis, it appears as if Nearchus was in doubt which route he should prefer, and was determined in his choice by procuring the assistance of Mazênes.

There is still a passage open between Kismis and the main, though little used, and between Angar and Kismis. Angar<sup>19</sup> has good water, with plenty of wild sheep and goats, as several of these islets seem to have, for the supply of mariners, fishermen, and pirates. We shall hereafter find one specified by Arrian, under the protection of Mercury and Venus, and pos-

the islands in the gulph, the tomb of some by more ancient superstitions.

Mohammedan reputed saint; and such tombs<sup>20</sup> In reality Poscidon; for Neptune is an Italian deity.

are generally small buildings constructed with brick, and ending in a cupola. Mr. H. Jones.<sup>21</sup> Eight hundred stadia.

The tombs of the Mohammedan saints have<sup>22</sup> M'Cluer, p. 17. Dalrymple's Preface, usually occupied the site of buildings dedicated p. 11. The isle is a league in length.



sibly both the goddess and Neptune were presiding deities, who preserved the animals landed on these spots, till the breed was established. Both the bay in which Angar lies, and the isle itself, are vaguely defined; but the second chart of M'Cluer is probably correct.

No day is specified before their departure from the anchorage at Angar, but I allow one here, as in the former part of the voyage, and leave the correction, if any error should arise, to the conclusion of the narrative.

—  
An Island.  
January 3.  
Anchorage  
3d.  
Day 3, or 94.

Weighing from Angar, the fleet proceeded, apparently, with an intention to double the western end of Kismis, and return upon the coast of the main; but having sailed too late on the tide of ebb, three of the galleys grounded on a shoal off Bassidu, which runs out from the western point of Kismis, and were so long detained, that they did not join the rest of the fleet till two days after. In consequence of this accident, such of the vessels as were not so near the shore, or so far involved in the difficulty, drew off to the south-westward, and extricating<sup>100</sup> themselves from the shoal with great exertion, got once more into deep water.

A glance at the chart will prove the correctness of the journal in this instance better than discussion; for they got on shore by standing too much to the north-east, and escaped by hawling off in an opposite direction. This brought them, contrary to their intention, to the isle at present called Great Tomb, or

<sup>100</sup> χαλεπῶς διαπλώσσαι τὰς ΠΗΧΙΑΣ, ἢ τὰ βάθια διαπεσύνθουσαι, p. 353; ἢ *rupicosis locis enavigantes*; potius, ἢ *brevibus*.

I have already sufficiently noticed the perpetual error of the translators in regard to *ρήχιας*.

It is evidently in this instance opposed to βάθια; and, what is still a greater confirmation, we have this shoal laid down in all our charts as a sand, and not as rocky or broken ground.

Tumbo, after a course of forty miles, which marks the distance<sup>121</sup> as nearly just as it could be fixed by observation. ✓

Another distance is given of about nineteen miles from the continent, which does not correspond; for the nearest part of the main measures thirty-five miles; but if we take the space between the western end of Kismis and Great Tumbo, it is as exactly nineteen miles as the opening of the compasses will give; and it is reasonable to estimate Kismis as continent in respect to such an islet as Tumbo.

The two islets called Tumbo<sup>122</sup>, if the appellation is Portuguese, have doubtless some allusion to a sepulture, either ancient or modern, and possibly some Marabout, or Imam, is revered here, as a successor either to some ancient hero or deity, or even Erythras himself. Such successors to the deities of Rome and Greece we find in the Roman catholic countries; and such, as it is said, are not unfrequent in the East.

The Great Tumbo is described as an isle one league in length, from east to west, with half that extent in breadth; it is resorted to by Arabs who come to fish, and has a sandy bay to the eastward, where the landing is convenient. Water, and probably goats, may be procured here; but it is uninhabited, and remarkable for a shoal running out six or seven miles to the southward; its latitude is  $26^{\circ} 12' 13''$ , or, as corrected by Mr. Dalrymple,  $26^{\circ} 24' 17''$ .

<sup>121</sup> The first is also called Naze, and the second is Nabgion, Nabgian, Nabejou, &c. Namin by Niebuhr.

<sup>122</sup> These two islands are generally called, 

Gumbad-e bousurg,	}	Great and Little	}	Dome,
Gumbad-e Kutcheek,				

from the domes which usually crown the sepulchres of these Mohammedan Imams.

Nāz and Namaun are epithets given by Persian mariners, the meaning of which is obvious to every Orientalist. Mr. H. Jones.

<sup>123</sup> Lieutenant M<sup>c</sup>Cluer, from Lieutenant Cant, p. 40.

The following morning the fleet, after weighing, directed its course towards the main ; and a view of the shoal off Kismis on the right, with the island Polior on the left, direct us evidently into the bay formed by Cape Sertes on the east, and Cape Bustion on the west, in the first chart of M<sup>c</sup>Cluer. Other charts transpose these capes, as Mr. d'Anville has done, for his Bustion, both town and cape are on the eastern point of the bay, and his Gherd [the Certes or Sertes of our English charts] is on the western extremity. A variety of the authorities before me place a town on the eastern promontory, and, whatever its name be, here I place the Sidodône of the journal. In this I am directed principally by the shoal off Basidu, or Bassadore, at the western extremity of Kismis ; for if it is natural that a Greek fleet should seek the coast again as soon as it was clear of the island, and had pursued a course the day before for that purpose, till deterred by the shoal ; it is plain, the same object was in view upon departing from Tumbo, and that the course pointed as directly to the main as the extremity of the shoal would allow. On this shoal there is one observation worth recording ; which is, that according to the instructions given to the English officers who navigate the gulph, " the shoal " off " Bassadore, though it stretches out a great way to sea, is a " bank of sand, and not dangerous." This accords perfectly with the accident which befell the fleet, as well as the escape from it, and confirms the assertion made all along, that the Greek term rendered rocky ground, is every where mistaken ; for wherever there is shallow water, a rippling, or a surf, there only, in this journal, it is applicable.

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SIDODÔNE.  
January 4.  
Anchorage  
4th.  
Day 4, or 95.  
SISIDONE  
of Grono-  
vius.

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<sup>12</sup> Niebuhr, in Dalrymple's Collection, p. 51.

The island Pulôra<sup>135</sup>, seen in this day's course to the left, fortunately retains still its ancient name, and is written Peloro, Polior, Belior, in the several charts; it is described as six miles long, and three in breadth, with a reef of rocks on the north-west side, lying in latitude 26° 22' 7". The fleet did not anchor at it, as it was said to be desert, but passed on to Sidodône, where no supply was found but fish and water; the country being poor, and the people living like Icthuóphagi. Strabo, who finds a Tyros and A'radus in the gulph, is said by Gronovius and Ortelius to turn Sidodône also into a city of the Sidonians, for such was the fashion of Greeks to reduce every sound<sup>136</sup> to a relation with something within their own knowledge. The position of Sidodône is not difficult to determine, if our charts are correct, for many of them place a town at the point called Sertes by M'Cluer, and the distance from hence to the western point of the bay answers to Arrian's measure of nineteen miles to Tarsia<sup>137</sup>. I have already noticed the disagreement of d'Anville and M'Cluer, in the transposition of the two capes, which is well worthy of consideration; for though Sidodône is an obscure place, and the difficulties minute, the fixing of a position is material, as an error at the beginning might vitiate the whole series. To prevent deception, therefore, I must first state, that M'Cluer<sup>138</sup> mentions Suráss, or Saráss, as a place he anchored at to the eastward of his Certes; this answers nearly to the Sannás of d'Anville, which he makes the termination of a range of mountains; and here there is a town, for such M'Cluer

<sup>135</sup> It is visible at seven leagues distance. made out a connexion with Bacchus.  
M'Cluer, p. 19.

<sup>136</sup> Thus Nysa and Meros, or Merou, were one of Thornton's charts.  
names they found in India, and immediately

<sup>137</sup> Jarcey, for Certes or Ghirde, appears in  
<sup>138</sup> P. 18.

marks; and here he procured stock for his voyage. The next point westward he calls Certes, and adds that it is visible from the Tombs, on leaving which you are to steer west for the ~~isle~~ of Polior. If, therefore, we observe that Nearchus was at Tumbo, we have here his course pointed out to the cape, and his island Pulôra on the left, as distinctly as if M'Cluer had been on board the fleet. M'Cluer next lays down a second cape twenty miles to the westward of Certes, which he styles Bestion (the Tarsia of Nearchus); and between these two capes, he says, there is a town called Charrack. Now M'Cluer may have misnamed Certes, Bestion, and Charrack; but the geography is precise, and this town, whatever name it bears, is placed at his Cape Certes by all the other charts, and by d'Anville himself. Whatever error, therefore, we may find in names, there is none in fact; for a very small distance allowed, in placing the town a little to the westward of this Certes, will give the nineteen miles of Arrian from Sidodône to Tarsia; and in this part the journal is peculiarly correct. In regard to names, I do suspect M'Cluer of mistake, but I am not qualified to decide. Charrack<sup>129</sup>, for instance, I doubt, because Charrack Hill, the most conspicuous feature on the coast, is seen to the westward of his Bestion; and therefore I do not discover a reason for placing a town of that name between the capes, or rather at his Certes, which is above forty geographical miles from Charrack. This town, however, is called Bustion by d'Anville; and the Certes of M'Cluer, Cape Bustion; and now,

<sup>129</sup> Charrack (pronounced according to the ~~em~~ in chariot) is the Tsjarrack of Niebuhr, and the site fixed west of Tarsia. It is the Sharraf, Shiraf, or Siraf of the Arabs, where

the commerce of the gulph was once fixed, which afterwards centered in Keish, and finally at Ormuz.

though I am certain I have my geography right, I find it impossible to harmonise the names to any one system<sup>130</sup>. I shall therefore give the authorities on both sides, and leave the decision to future navigators on the spot.

## TWO CHARTS.

<i>Eastern Point.</i>			<i>Western Point.</i>		
Certes, or Sertes,	M'Cluer.		Bestion,	c	M'Cluer.
Sertiss,	-	Harvey.	Girde <sup>131</sup> ?	-	Harvey.
Sertes,	-	Cant.	Bustion,	-	Cant.
Sertes,	-	Mascall, 1773.	Bustian,	-	Mascall, 1773.
Serte,	-	Van Keulen.	Batanas,	-	Van Keulen.

<i>Eastern Point.</i>			<i>Western Point.</i>		
Bustion,	-	D'Anville.	Gherd,	-	D'Anville.
Bistana	-	Bellin.	Gueldre,	-	Bellin.
Bastion,	-	Holmes.	Sertis?	-	Holmes.
Bistana,	-	D'Apres, 1745.	Gueldre,	-	D'Apres, 1745.
Bistana,	-	D'Apres, 1776.	Gueldre,	-	D'Apres, 1776.
Râs-el-Heti <sup>132</sup> ?	Niebuhr.		Râs-el-Dsjerd,	Niebuhr.	

In determining this question, therefore, the French authorities agree on one side, and the English and Dutch on the other; and here a question arises, whether all the French geographers do not follow Thevenot, as d'Anville confessedly does. Thevenot's words are these: "We were got off of the other end of

<sup>130</sup> See this difference at large in Dalrymple's Collection, tab. v.

<sup>131</sup> Harvey has made two points of Girde and Sertis, which are evidently the same.

<sup>132</sup> Niebuhr is not perspicuous. Râs el

Heti is too close to Râs-el-Dsjerd, and his coast ill defined; but there can be little doubt that his Dsjerd gives by the s, Sertes and Certes, and by the d, Derd and Tarsis.

“ Keis, and then the wind slackened much. Half an hour after we came off and on a place of the main land, where the shore opens towards the east, and forms a gulph in shape of a half circle, and the *outmost* point of that circle is called Gherd.” I have not the French edition; but d’Anville, who quotes it, writes, *La terre où finit ce demicircle est appelée Gherd*. Now, though this is not definite, for a semicircle has two terminations, still d’Anville determines on Gherd for the western cape, in which he is supported by Niebuhr, whose testimony is of great weight, and his Dsjerd is evidently the western cape and Tarsia<sup>133</sup>. Upon the whole, therefore, I incline to think M’Cluer’s topography right, and his names wrong; and as his mistake in affixing the name of Bombareek to the wrong cape has been noticed before, there is less scruple in supposing him liable to a similar error in regard to the whole of this bay.

At Sidodône water was procured for the fleet, which, after weighing in the morning, proceeded somewhat less than nineteen miles to a cape named Tarsia<sup>134</sup>, and the same distance from that point to Kataia, an island at the western limit of Karmánia. These distances agree so nearly with our nautical authorities, and the intervention of the cape marks so precisely the nature of the coast, that it is impossible there should be any error of consequence in fixing the position of Sidodône. Kataia still retains some resemblance to its ancient name in the various

—————  
TARSIA  
CAPE.  
January 5.  
Day 5, or 96.

—————  
KATAIA  
ISLAND.  
—————

<sup>133</sup> The classical reader will be more easily convinced of this fluctuation by reference to the writing of Tyrus. The Phœnician word is Tsor, with the two initials  $\tau$ s, correspondent to Niebuhr’s  $\psi$ s; and Tsor becomes by the  $\tau$ ,  $\tau\psi$ -os, Tyrus; by the s, Sor or Sar, the root of Sour Souria;  $\Sigma\psi\iota\alpha$ , Syria; and found

in Virgil,—Sarrano indormiat ostro; where the scholia write, a *Saro* murice. By the same analogy, Tserd-Tarsia, Serd-Sertes, Certes, Gherd, Sjerd.

<sup>134</sup> I conceive that Tarsia is preserved in the Râs-el-Dsjerd of Niebuhr.

forms of Kaish, Keish, Guess, Queche<sup>135</sup>, Qàs<sup>136</sup>, Ken, or the Zeits of the Dutch maps. It is an island evidently more marked by navigators than others in its neighbourhood; and yet, as it lies twelve<sup>137</sup> miles from the coast, there is no apparent reason for its attraction of Nearchus, unless it were the hope of procuring there a supply of goats for the fleet.

Kataia, says Arrian, is a low<sup>138</sup> desert island; and Thevenot<sup>139</sup> mentions it as about five leagues in circuit, very low and flat. M'Cluer adds, it is a very beautiful island, better planted with trees than any in the gulph, and about the size of Polior, but not so high. This is farther confirmed also by Lieutenant Cant, who calls it a low fruitful island<sup>140</sup>. Nearchus found it uninhabited; but frequented by visitors from the continent, who annually brought goats here, and, consecrating them to Venus<sup>141</sup> and Mercury, left them to run wild. What deities of the Persian or Arabian mythology are alluded to by these titles is not easy to determine, but the practice indicates the navigation of the gulph in that age; and if the gods were to protect the breed for a time, we must suppose it was ultimately intended for the use of man, upon the same principle that Juan Fernandez was stocked by the Spaniards in the South Seas. Nearchus has not informed us whether he violated the asylum of these

<sup>135</sup> With the French pronunciation.

<sup>136</sup> Niebuhr.

<sup>137</sup> Eight by M'Cluer's chart; nine by Thevenot.

<sup>138</sup> αλιτινία.

<sup>139</sup> Part ii. p. 173.

<sup>140</sup> Al-Edrissi, p. 56. mentions Kis also. D'Anville. But without any attributes except its distance from Kismis.

<sup>141</sup> Hence called Aphrodisias by Pliny,

lib. vi. cap. 28. Hard. Distinguished by his adding, inde Persidis initium.

He also names

Philos	=	Pylora,
Casandra	=	Caikandros,
'Aratia Aracia	=	{ Ara, L'Ara,
		{ Shitouar.

But when Pliny gives the abstract of Nearchus or Onesicritus from Juba, c. 26. Hard. he does not know his own four islands by name.



animals, but this appears the natural inducement for his leaving the coast to make this island, as he had obtained no supply either at Tumbo or Sidodone; and we do not read that the sacrilege, if committed, was revenged by Mercury or Venus in so severe a manner, as the companions of Ulysses were punished for feasting on the oxen of Apollo.

Keish was at one period possessed of a flourishing commerce, and great influence in the gulph; for d'Anville informs us from Texeira, that even Gerun itself was part of its territory, and granted to the Hormosians of the continent when they were oppressed by the invaders<sup>42</sup> on the main, and transported to Gerun their treasures and their name, as to a place of refuge. The information of Niebuhr respecting this practice of the natives on both sides the gulph, flying from oppression to the islands, throws great light upon this subject; such emigrations seem to have existed in all ages, and some appear to have taken root and flourished, like those in Keish, Ormuz, and Karack, till they were involved in the revolutions of the continent; while others served only for a temporary retreat, abandoned again as soon as the storm had blown over. Keish retains still some superiority in the account of our English navigators who have visited it, by whom it is described as flourishing, well planted, and capable of supplying refreshments to the vessels which frequent this sea. Its latitude is fixed by Mr. Dalrymple at 26° 34' 52".

A line drawn from Kataia to the main, separates the provinces of Karmánia and Persis; and that this line is not merely imaginary, may be concluded from a remarkable hill on the main,

<sup>42</sup> Most probably upon the inroad of Timour's sons, about the year fourteen hundred.

called Charrack in our English charts, which is probably the termination of a range running inland, and forming a natural boundary. Somewhere at the foot of Charrack, and nearly opposite to Keish, stood the town of Siraff, noticed by Al-Edrissi as a seat of commerce in his time, and connected with Keish, as Gomeroon was afterwards with Ormuz. In the ninth century Siraff<sup>143</sup> was a port of importance; for it seems in that early age to have been in the possession of the Arabians, and the centre of an Oriental commerce which perhaps extended to China; both Kataia<sup>144</sup> and Siraff fell into decay, as Ormuz rose into consequence long before the Portuguese were masters of that island; and though Siraff is now in ruins according to d'Anville, Charrack (the Tsjæråk of Niebuhr) exists very nearly in the same site<sup>145</sup>, and is still the residence of an Arab Sheik. The measures upon this coast proving as erroneous from deficiency, as those on the coast of the Ichthyophagi from excess, it becomes necessary to specify the default, for which no better excuse can be given than the situation of Nearchus in both instances. If distress magnified the length of his former measures, ease and security appear to have diminished these on the coast of Karmania. The detail stands thus:

<sup>143</sup> See the voyage of two Arabians from Renaudot, in Harris's Collection, vol. i. p. 523. The ships of Siraff went to Mascat to take their departure, *i. e.* they found that coast the best point for taking the advantage of the monsoons. Alfragani mentions its decay in his time, *Gol.* p. 116; but perhaps Golius himself, and not Alfragani.

<sup>144</sup> See the conquest of Keish by Shah

Kodbadin, king of Ormuz. Stevens, 399, about the year 1320.

<sup>145</sup> There is just ground of suspicion that Charrack, Tsjæråk, Sharak, Sarak, is actually Saraf, or Siraf. See the account of this town and its commerce in Renaudot and Harris; and the circumstance of houses built with the bones of whales. Renaud. p. 95. Eng. edit.

<i>British Miles deduced from Arrian's Stadia.</i>	<i>From BADIS</i>	<i>Stadia.</i>	<i>N. Miles by Chart.</i>
50	to an open shore, Armozon,	800	43
43½	{ Neoptana, -	{ 700 }	69
6½			
12½	Oaracta, -	300	34
18½	Oaracta, second station,	200	32
25	Tumbo, -	400	36
37½	Sidodone, 600 (allowed)		36
37½	Tarsia and Kataia,	600	46
<hr/> 231½		<hr/> 3100	<hr/> 296
	Allowed at Sidodone,	600	<hr/>
		<hr/> 3700	

These three thousand seven hundred stadia agree with the total both of Strabo and Arrian; and the distance allowed at Sidodone not only makes the sum accord, but corresponds with the measures of the former days. Unfortunately, however, three thousand seven hundred stadia produce only two hundred and thirty-one miles British, and the opening of the compasses gives two hundred and ninety-six nautic miles, or about three hundred and thirty-nine British; we have, therefore, a balance against Arrian of one hundred and eight miles which he has not accounted for, and no compensation is at hand to which we can have recourse, for the distance omitted at Badis cannot amount to ten miles<sup>46</sup>. The great error lies between Badis and the Anamis, or round the coast of Oaracta, for some of the latter measures are sufficiently correct; and as Arrian has allowed

<sup>46</sup> It is, I imagine, from Cape Jask only to the centre of the bay.

only fifty miles for the length of that island, which is in reality little short of seventy, this, with the other mistakes dependent on it, though it will not compensate, may contribute to reconcile the difference. It is not, however, my intention to justify the stadium of d'Anville in particular instances; but having shewn its general correspondence with the course of the whole voyage, I state facts upon the present occasion as they appear. Some advantages<sup>147</sup> might have been taken in measuring with the compasses, of which, though I availed myself in detailing particular stations, I have avoided in collecting the total. One circumstance may be mentioned in Arrian's favour, which is, that all his numbers are hundreds, without regard to inferior denominations, and this proves that he speaks generally, thinking little of modern accuracy, which divides to a minute or a second.

The coast of Karmania or Kerman, next the sea, is generally a low and narrow stripe below the mountains<sup>148</sup>, arid, and hot in the extreme; this tract is called Kermesir, and compared by Niebuhr to the Tehama of Arabia, a specific term among that people also, to distinguish the margin bordering on the sea, from the mountainous region inland. Kermesir, however, is not confined to Kerman, but prevails as applied to a territory of the same character, tending much farther to the westward, through the maritime part of Persis. This whole coast, from Gomeroon to Cape Bardistan, is now, he informs us, under the power of a tribe of Arabs called Beni Houle, divided into little principalities

<sup>147</sup> In measuring the total, I necessarily took from point to point. In measuring from island to island, I have sometimes taken from the nearest side of each. This makes some distances correct in detail, but discordant in the total.

<sup>148</sup> Sannas and C. Nabon are the termination of ranges at the sea, coming from the chain which runs parallel with the coast.

under Sheiks, independent of each other, and all weak by perpetual dissension. There is little agriculture among them, as they depend for support on fishing and hunting, and export little except wood, or such commodities as the country yields without cultivation. The Sheiks<sup>149</sup> he specifies are those of Seer<sup>150</sup>, Mogo, Tsjærack, Nachelo, Nabend, Asloe, Tæhrie, Schilu, and Konkoun, which are all places on the coast, with a territory not worth defining; and the inhabitants of which live, like our ancient Ichthuóphagi, principally upon fish, either fresh or preserved. Such a town Arrian represents Sidodóne<sup>151</sup> to have been in the age of Alexander; and though the decline of the Persian power had not been of sufficient continuance to allow of Arabian intruders, as is the case in the present desolation of that empire, the manners of the people are very similar to those of the modern inhabitants, and their connexion with Arabs, I am persuaded, might be traced, by analysing<sup>152</sup> the names preserved in our classical historians. That part of the province called Moghostan, towards the mouth of the gulph, with the island of Kismis, and those in its neighbourhood, derived infinite advantage from the settlement of the Portuguese at Ormuz, and foresaw the ruin of their own happiness in the preparations of Abbas for the siege; they were consequently disaffected, and incurred the suspicion of their sovereign as strongly as the Portuguese provoked his hatred. The consequences have proved the justice of their reasoning; agriculture is lost when commerce produces no demand, and manufactures

<sup>149</sup> Schiech. Niebuhr.

<sup>150</sup> See also Otter, who relates the transactions of this tribe with Nadir Shah. Vol. ii. c. 25.

<sup>151</sup> Πολυκίον σμικρὸν, καὶ πάντων ἀπώγειν, ὅτι μὴ

ὑδατος καὶ ἰχθύων, p. 353.

<sup>152</sup> Bruce has great success in applying this analysis to some of Ptolemy's names in the Red Sea, Orneon, Portus Albus, &c. vol. i.

perish where there is no protection. Before the capture of Ormuz, the English loaded silk, both raw and manufactured; they find nothing there at present but salt <sup>153</sup>, sulphur, Kerman wool, and copper; native commodities, but not wrought. The nature of this country from Gomeroon to Lar, the capital of Laristan, which is the district next to Moghostan, cannot be described better than it is by Pietro della Vallé <sup>154</sup>; he insists much on the general want of rain, a circumstance similar to that on the coast of Mekran <sup>155</sup>, and mentions, that at Lar itself, where there is neither stream nor spring, it sometimes does not rain for several years following. I suspect that Laristan terminates west upon the coast, near Kataia, as did the ancient limit of Karmania; or, perhaps, at Sanás: but I find no authority to determine this point with precision. Both these districts are visibly comprehended in Kerman, and are, as I conjecture, confined to the tract below the mountains.

Both Ptolemy and Marcian fix the limits of Karmania at the river Bágrada; but as they disagree with Arrian in carrying the eastern boundary to Mosarna, and this river on the western border is not very clearly determined by modern geography, it will, if not essential, be some gratification to curiosity at least, to examine Ptolemy's list of rivers, and try whether any light can be derived from the order he has given them. There is no river on the main opposite to Keish, or Kataia, in any of our charts, and this proves that the limit assigned by Arrian and Ptolemy is not the same; in looking, therefore, to the west, we find a

<sup>153</sup> Journal of Houghton Indiaman, 1755.

<sup>154</sup> Vol. v. sub fine.

<sup>155</sup> The correspondence of the modern accounts with the ancient is worthy of remark.

Strabo says, it never rains in Mekran below the mountains. Lieutenant Porter writes, that when he was at Churbar there had been no rain for six years.

conspicuous point at Cape Nabon<sup>156</sup>, and a river which falls into the gulph close to it; here I fix the Bágrada of Ptolemy; and, by reckoning from A'namis to this stream, I can discover five rivers out of his seven, if not more.

<i>Marcian.</i>	<i>Ptolemy.</i>	<i>Arrian.</i>	<i>Modern.</i>
1. Ságanus <sup>157</sup> ,	A'ndanis,	A'namis,	Mina.
2. Addánus <sup>158</sup> ,	Ságanus,	}	{ Bender-Ser?
3. Akhiádama, Agédana Island,	Akhídana,		{ Nagana Guda?
4. Kórius,	Kárius,		Rud Shiur.
5. Káthrapus,	Atapus, Araps,		Sarass?
6. Dora,	Dara,		Dara-bin.
7. Bágrada,	Bágrada,		Nabon.

1. The Ságanus of Marcian is evidently transposed, which justifies the liberty I have before taken with this author, in rectifying his transpositions, and reducing them to the order of Arrian; for in this instance, though he is the professed copyist of Ptolemy, he deserts his original; I assume, therefore, his Addánus for the A'ndanis of Ptolemy, the A'namis of Arrian, and the Mina river, or Ibrahemi, of our modern charts.

2, 3. Ságanus<sup>159</sup> succeeds therefore according to Ptolemy, and either at this river, or Achídana the next in order, I place the stream which comes in very near Gomeroon at Bender-Ser. I cannot find two<sup>160</sup> rivers, or even torrents, at this place in any chart; but in Ressende's<sup>161</sup> manuscript delineation of the coast

<sup>156</sup> The Nabon river is a very large stream, and consequently fitter for a boundary. Mr. Jones.

<sup>157</sup> Noticed by Am. Marcellinus, l. xxiii. p. 462.

<sup>158</sup> Tuanes, MS.

<sup>159</sup> Saganos. Pliny, lib. vi. 25.

<sup>160</sup> Pietro della Vallé passed one small stream in his road from Mina to Rudshiur.

Vol. v. p. 419.

<sup>161</sup> Brit. Mus.

I see two streams, one opposite <sup>162</sup> to Ormuz and a second more to the south ; these may be the two of Ptolemy, but more likely the Bender-Ser and Ibrahemi which Ressende mentions, in another part of his work, by the name of Obremi. D'Anville has a river in this position which he names Nagana-Guda, bearing some distant resemblance to Ságanus, and Akhiádama, or Akhídana ; or both, perhaps, have a relation to Marcian's Agédana, which he calls an island. It is not impossible, since Marcian mentions nothing correspondent to Ormuz, that his A-Gedana is that island, the Gerun of later writers ; and if so, his own Akhiádana and Ptolemy's Akhídana are the correspondent <sup>163</sup> river on the main, opposite to Ormuz, where the stream of d'Anville lies. Upon this supposition, we account for one stream at least out of the two.

4. In Kárius <sup>164</sup>, or Kórius <sup>165</sup>, we may trace some resemblance to the Rud-chiur <sup>166</sup> of our modern maps ; a stream of some importance, as it has a longer course than the others, forms the boundary between Moghostan and Laristan, and falls into the Kishmis Channel, not far from Kunk or Kongo, a town, from its healthiness, much fitter to have become a mart than Gome-roon, if it had not been situated in the Straits. Chiour, Kiour, or Schiur <sup>167</sup>, signifies salt, and Rud-Chiur the Salt river ; if,

<sup>162</sup> They are noticed also by Texeira.

<sup>163</sup> Texeira.

<sup>164</sup> Córíus P. Mela.

<sup>165</sup> Texeira.

<sup>166</sup> See Pietro della Vallé, vol. v. p. 373.

<sup>167</sup> Schiour, Chiour, and Kiour, enter into the composition of many names of rivers ; for many are salt in Persia, Karmania, and the Mekran ; and hence Roud-Kiour, the Salt River.

Otter has a Roud-guird in his route from Hamadan to Ispahan. Vol. i. p. 192. And Guird, he says, signifies *environs* ; but if Guird signifies *environs*, it is from Gerd, Gherd, or Certa ; and signifies a town, not a river. The place, however, where he was, was called Guerdge, *the town* ; and, if so, Roud Guird is only the *river of the town*.



therefore, we observe that the Greeks had no sound like Sch <sup>168</sup>, it will be readily allowed that they could not approach nearer to the Oriental name than Koor-ius <sup>169</sup>, or Kor-ius; and this consideration, united with the order and locality of this river, ought to establish its identity. If farther confirmation is wanted, we find in Pliny <sup>170</sup>, that he mentions it by the very name of Salsos <sup>171</sup>.

5. Kathraps, Káthrapus, or Káthrapis, corresponds with the Araps, or A'rapis, of Ptolemy; but as no stream of modern geography connects with it, it serves only to justify the liberty we may take with names; or, if it has a modern representative, it is possibly a torrent from Mount Sannass, or Saráss; and Saraps is not a greater variation from Araps than the Kathraps of Marcian.

6. Dora <sup>172</sup>, or Dara, presents a similarity of sound with the Dara-bin, or Derrabin, of our present charts, laid down almost opposite to the islands Busheab <sup>173</sup> and Schitwar. Here I must confess I looked for the site of Ptolemy's Bágrada, as lying nearest to the Kataia of Arrian; but the resemblance of sound induces me to fix Dara at Dara-bin, and if so, Bágrada must

<sup>168</sup> Pietro della Vallé, when he writes Chiur, naturally suggests the Italian pronunciation, answering to Kiur in English.

<sup>169</sup> This Córíus was known also to Mela. Sæthis per Carmanios; supra, Andanis et Corius effluunt. Sadly disfigured by Salmasius, p. 1182. What Sæthis means I cannot say, but evidently a river of Karmania; for Mela writes, "Above Sæthis, that is, more to the north, the A'ndanis [A'namis] and "Kóríus fall into the sea." All this is right; for Córíus or Kóríus is the Roud Chiour [Kiour] of De la Vallé, and falls into the

Straits of Kismis at Kunk or Congo.

<sup>170</sup> Lib. vi. cap. 25. He perverts the order. See Salmas. Plin. Ex. 1181.

<sup>171</sup> D'Anville carries this title of Salsos up to Sítacus; but if we observe that it is joined with others evidently in Karmania and at the eastern part of the gulph, why should it be transported into Persis, and so far to the westward? See Mem. p. 159.

<sup>172</sup> Daras of Pliny, *ibid*.

<sup>173</sup> See M'Cluer's chart, Harvey's, d'Après, &c.

be carried to the next stream westward, which is at Cape Nabon. The Darabin is in the neighbourhood of Arrian's Mount Okhus, and afforded a safe anchorage to the fleet, apparently in the mouth of the river. That mountain extends along the coast from this river to Cape Nabon, and is called Dahhr-Asbân by Niebuhr<sup>174</sup>; Dahhr is as evidently, therefore, the Dara of Ptolemy as Dahhr-Asbân is the Darabin of the moderns.

7. Bágrada<sup>175</sup> I place at Cape Nabon, or Nabend, for the reasons already specified; and if I find no modern name to correspond with it, it must be considered that navigators do not give us the native names<sup>176</sup> of rivers in the gulph, but denominate them from the places where they disembogue. The Basra river is known to every ordinary mariner; the Shat-el-Arab is a name that we must search for only in the map of the geographer, or the chart of the enlightened navigator. It is not improbable, therefore, that if the question were put to the natives, their name<sup>177</sup> of the Nabon river might still retain the traces of Bágrada.

This disquisition on the rivers of Karmania ought not to be considered as foreign to this work, for one great object of it is, to reconcile ancient geography with modern; and if a monument is by these means raised to the correctness of Ptolemy on

<sup>174</sup> And Capper, who follows Niebuhr's orthography.

<sup>175</sup> D'Anville carries the Bágrada to the Agradat of Strabo in Cœle-Persis; but *ἀόλη* implies the country between the mountains, and not on the sea coast. By the name of Dara, which precedes, and which I consider as demonstrably fixed, from its relation to Dahhr-Asbân, I am fully persuaded that Na-

bon is the Bágrada. See d'Anville's Mem. p. 159.

See Captain Hamilton's E. Indies, i. 94.

<sup>176</sup> This is true throughout the whole gulph: Mr. H. Jones.

<sup>177</sup> The river Bágrada in Africa is derived by Bochart from בִּרְכָתָא, Barkatha, a pond. Shaw, p. 77. And that characteristic answers well to the account.

the coast, it is some compensation for the charge of error imputed to him in regard to the islands ; a just distribution of these was, till within the last century, a desideratum in geography ; and if they are now disposed with precision, the world is indebted to the attention of English navigators, and to no one more than M'Cluer <sup>178</sup>.

I shall close this account of Karmania with noticing, that Arrian informs us the Karmanians had the same manners, habits, and customs as their neighbours in Persis, and resembled them likewise both in arming and forming the troops they contributed to the service of the empire. The modern Persians consider them as a people, acute, subtle, and prone to rebellion ; and their province was the last retreat within the empire for the ancient Parsees, or worshippers of fire. This unhappy cast, under the name of Guebres, Abbas endeavoured to exterminate, when the residue was dispersed over India, and a numerous tribe of them are now settled at Bombay, where they build those celebrated ships which, in construction and durability, prove the service they might have rendered their own country. Never, since the world began, did any government gain by persecution.

## II. PERSIS.

IN conducting the fleet from its entrance into the gulph, it has been no difficult task to ascertain every station at which it anchored ; the assistance I have derived from d'Anville, and the correctness of our English charts, I have acknowledged at every

<sup>178</sup> See *infra*, Inderabia.

step, and it is a pleasure to add, that the more correct they are, the more clear is the correspondence of the journal with the actual state of the coast at the present day. We are now to enter upon the province of Persis, and though I cannot promise equal perspicuity in regard to some stations of little importance, the general description of the coast is perfect, and the principal harbours as fully ascertained as they are in modern geography. One instance of this will be more particularly apparent in the station which immediately succeeds.

The fleet weighing from Kataia arrived, after a course of twenty-five miles, at Ila, an anchorage on the coast covered by the island Kaikandros. The name which M'Cluer gives to a place very nearly correspondent is Gillam<sup>179</sup>, from which if we subtract the initial letter, which is the representative of an aspirate, we find Illam sufficiently allied to Ila; and if the antiquity of Gillam could be ascertained, the identity would be complete. In Kaik-ANDROS also the modern name of Andarvia may be discovered, which is one out of a multiplicity of titles bestowed upon an island in this situation, styled Inderabia by M'Cluer, Inderabi<sup>180</sup> by Niebuhr, Angarvia, Indernea, and Indernore, by the other charts: and perhaps when we reflect that the Greeks have no SH, we may be induced to suspect that the Kaik-Andros of Nearchus is equivalent to<sup>181</sup> Keish-Andar-

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ILA PORT.  
KAIKAN-  
DROS  
ISLAND.  
January 6.  
Day 6, or 97.

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<sup>179</sup> It is the same as Lieutenant Cant's Gella, which approaches nearer to Illa, or Ila; but Cant's Gella is ill placed. Illa becomes Hilla and Gilla, like Han, Khan, Cawn. Hendoo Gentoo.

<sup>180</sup> Anderipe, Inderuca, Hinderabi, &c. It is possibly also the Lameth of Al-Edrisi, as he mentions Siraf and Tsafac, i. e. Tsjarack,

in its neighbourhood, p. 120.

<sup>181</sup> Kili Kiavus is likewise mentioned by Otter, vol. ii. p. 213. but fabulous.

After making this conjecture, I found in Golius, that Caicavus is *divus Cavûs*, who obtained water and milk in this island or Keish. Gol. ad Alfrag. 117.

via<sup>182</sup>; an additional title this island might have obtained from its proximity to Keish, or its dependence on it. From the eastern point of Keish to Andarvia, says d'Anville, it is nearly six leagues; and he assumes<sup>183</sup> the eastern point as a spot where the fleet might have anchored, in order to acquire a distance approaching to the twenty-five miles of Arrian: but d'Anville would have been better pleased to find that M'Cluer, in his second chart, has extended the distance from twelve to twenty geographical miles between Keish and Inderabia, and twenty geographical miles supplying upwards of twenty-three<sup>184</sup> miles British, make an agreement with Arrian sufficiently correct. M'Cluer writes to Mr. Dalrymple<sup>185</sup>: "I have altered the situation of Inderabia, as I found it too near Kenn<sup>186</sup>." And in this testimony we have a satisfaction in observing, that the more correct the modern chart is, the better it corresponds with Arrian. M'Cluer has rendered a second service in laying down this isle nearer to the main than it appears in most of the other charts, for so Arrian describes it, as covering the road and making the anchorage secure. Inderabia, according to Lieutenant Cant<sup>187</sup>, is a low island, not inhabited, but affording fresh

<sup>182</sup> I have been the more confirmed in this opinion by observing in Golius, p. 117. which I have been enabled to interpret by the assistance of my friend Dr. Russel, that Keis is the proper name of a man; and that the Arabs, fabulously perhaps, like the Greeks, derive the name of the island Keis from Keis ebn Amceerat, Keis the son of Amceerat. In this manner, Keis might be easily made an accessory to Andarvia also. Andarvia, written so many ways, approaches the Greek more nearly in Portuguese, Anderoya; for so it appears in Reassende.

<sup>183</sup> This licence is justifiable wherever a coincidence can be obtained by it; and I use it freely when occasion requires, because the point of anchorage is never ascertained by the journal in the several islands.

<sup>184</sup> This distance is taken from the two extreme points nearest; so that by taking an anchorage in Kenn, you may have twenty-five miles exact.

<sup>185</sup> P. 13. Pref. to Dalrymple's Collection.

<sup>186</sup> Keish, written Kenn in several charts, but I believe always improperly.

<sup>187</sup> P. 44.

water; "the channel between it and the main is about a mile broad, with water from seven to fifteen fathoms, nearest the island;" its mean latitude is  $26^{\circ} 49' 37''$ .

From Kaikandros to a second island, no distance is given, and only two miles and a half to an anchorage on the coast; from this anchorage again, to a harbour under a mountain called Okhus, no measure is specified. The island, Mr. d'Anville complains, was laid down incorrectly; but he read in the old Portuguese charts, *Ilha de L'Ara*, or *Lara*, and so I find it in *Ressende* and *Thevenot*<sup>188</sup>. We have now, however, two islands accurately placed in M'Cluer's second chart, which agrees better with *Arrian* than his first, and by the position of these we must determine the course. Taking, therefore, a measure proportionate to the correctness of the journal for some days past, I allow, from the centre of *Indérabia* to *Mount Okhus*, about three hundred or three hundred and fifty stadia, that is, from eighteen to twenty-one miles, and I include the whole course in one day. The two islands are called *Schitwar*<sup>189</sup> and *Busheab*, and the latter is written *Schech-Schaib* by *Niebuhr*, equivalent to *Abu-Schaib* or *Bu-Sheab*; for *Schech* is *old*, and *Abu*, *father*, and both are titles of respect, as we use *Seigneur*, or *Sir*, in Europe. *Schitwar*, the smaller of the two, and the one directly in the course of the fleet, is the island which *Arrian* means, and which he says was inhabited, and possessed of a fishery for pearl; a circumstance not unworthy of remark, as

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OKHUS  
MOUNTAIN.  
AN ISLAND.  
A PORT.  
January 7.  
Day 7, or 98.

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<sup>188</sup> Thevenot saw the two islands at a distance, and therefore brought them into one; and so M'Cluer says the trees on *Schitwar* seem to be on *Busheab*. It is seventy leagues from *Karak*, according to *Thevenot*, Part ii. p. 173.

*Thevenot* mentions likewise that it is very near the coast, and a passage within. It is possibly the *Araka* of *Ptolemy*.

<sup>189</sup> *Capper* writes this name *Shudwan*.

several travellers inform us, that pearls<sup>190</sup> were formerly taken at Karak<sup>191</sup> and other places on the eastern side of the gulph, as well as on the celebrated bank of Bahr-ein. If I am right, therefore, in assuming Schitwar for Arrian's nameless island, the remainder of this day's course is clear; for the forty stadia he allots for crossing from hence to the main, is nearly equal to the breadth of the channel between Schitwar and the eastern point of the river Darabin, where I suppose the first anchorage to be; and the second, only by crossing the river to the western point, or some convenient bay adjoining. This is the apparent reason why no distance is mentioned here, while the measure between Inderabia and Schitwar is an omission. M'Cluer marks an anchorage in a bay, and a town called Schitwar<sup>192</sup>, just to the westward of the mouth; here<sup>193</sup> I conclude the station of the fleet was, and here we can find a mountain to correspond with Okhus. That the town on the main should bear the same title as the island is a circumstance similar to that which takes place at Ormuz, and is founded probably on the practice recorded by Niebuhr, already noticed, of the inhabitants on the coast flying to the islands, in their neighbourhood, or the island receiving its name from a town on the main. This is the second instance, and two more will occur, with a third, that possibly may be accounted for upon the same principle.

<sup>190</sup> Pearls are now frequently taken at Car-rack; but the depth of water is too great, and the pearls found, though very large, adhere to the shell: two circumstances which will, in my opinion, ever prevent its being a valuable fishery. The year before I came to England, I was necessitated to pass some days on Car-rack by myself; and on inquiry I found a pearl that year had been taken, weighing 40

wuttas; but it adhered to the shell, and consequently was of very inferior value to what it otherwise would have been. Mr. H. Jones.

<sup>191</sup> Thevenot, *ibid.*

<sup>192</sup> Chetwar.

<sup>193</sup> Harvey's chart places Schitwar point on the eastward of the river, but marks a small town where M'Cluer's Schitwar or Chetwar is. Harvey 1778.

The mountain Okhus<sup>194</sup> is nothing more than the termination of an high range of coast extending from Cape Nabon to the river Darabin, called Dahhr-Asbân by Niebuhr, as already noticed, and distinctly specified in M'Cluer's first chart; I have not been able to trace the connexion of this range inland with the great chain, which runs parallel to the coast; but there can be little doubt of the fact, as the two rivers Darabin and Nabon at the two extremities ought to be the produce of this mountain, throwing off its waters on both sides, and forming two streams, which appear to have some pre-eminence above the torrents to the westward. In Dahhr-Asbân<sup>195</sup> we have the Dar-abin of our charts, and the Dara of Ptolemy, which he places indeed in latitude 28° 40'; but as he has given a more northerly direction to the gulph than it really has, this is readily accounted for.

At the mouth of this river, and on the westward side then I fix the station under Mount Okhus<sup>196</sup>; and I must observe that M'Cluer's second, or corrected chart, coincides with the several circumstances in Arrian more nearly than any of the others, or even than that which is inserted in the present work.

Of the two islands, Schitwar lies nearer to the coast on the south-east of Busheab, and the channel between Schitwar and the main was not passed either by Cant or M'Cluer; but they both intimate, from the information of their pilots, that the passage is clear, as well as the other between this isle and Busheab, which is less than a mile broad. Busheab is the largest island

<sup>194</sup> See M'Cluer's first chart. Two of Claude Russel. Kämpfer. Van Keulen. D'Après 1776. Harvey 1778.

<sup>195</sup> See Niebuhr, vol. ii. p. 192. French edition.

<sup>196</sup> Ochus is the name of a river which falls into the Oxus, and I doubt not contains some relation to a river here. See Salmas. Plin. Ex. p. 216.



in the gulph except Kishmis<sup>197</sup>; it is low as well as Schitwar, but has some high land at the back; it is well planted and inhabited, four leagues long, and four or five miles broad, and lies in latitude 27° 1' 30". Schitwar is said to be still more fruitful, which is a sufficient reason why it was found inhabited by Nearchus, and possibly why a pearl-fishery was established in its neighbourhood. The narrowness of the channel reduced to less than three miles by Arrian, makes me adhere to M'Cluer rather than any other authority; and as he lessens<sup>198</sup> the usual distance specified between Busheab and the main, there is great reason to believe that he is near the truth in laying down Schitwar, though he was not through the channel himself.

Niebuhr places Nachelo, the residence of a Sheik, in the river Darabin; and if I had found any resemblance in this name<sup>199</sup> to Okhus, I should have looked to this place for a station; but in the position taken there can be no error of consequence to the journal, except that an addition to the distance Arrian gives between the Darabin and Cape Nabon would be convenient, as his account is at present somewhat in excess.

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APOSTANI,  
OR  
APOSTANA.  
January 8.  
Day 8, or 99.  
A day  
allowed.

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From Okhus to Apóstani the course was twenty-eight miles, which carries the anchorage rather more than half way from the Darabin to Nabon; and here we are to find a road, as several vessels were seen at anchor, and there was said to be a village at the distance of near four miles up the country. A more hopeless cause for research has not yet occurred, for the high land upon the coast promises little for the site of a village, and the nature of the shore presents no appearance of shelter. D'Anville finds a bay called Estornadi at the foot of the moun-

<sup>197</sup> And I suppose Bahrein.

<sup>198</sup> Memoir, p. 20.

<sup>199</sup> Okhus, N'-Okhe-lo?

tain, from what authority does not appear, and from want of good charts has no river either at Darabin or Nabon. He places Asselo<sup>200</sup> and Apóstanos<sup>201</sup> in the same place, which is evidently incorrect, as Asselo<sup>202</sup> or Aslo is fixed by all the best charts to the north-westward of Nabon, while Apóstani is evidently twenty-five miles to the east. But before we can determine upon a site, we must dispose of a town called Chewra, Chetow, or Sherouw, which takes a variety of positions from the eastward of the Darabin, almost to Cape Nabon.

The resemblance of these names, however written, would induce a supposition that they all relate to the same place; but Sherouw, or Sherouve, in the Dutch charts placed eastward of the Darabin, is the Shirav, or Siraf, of the Eastern geographers, opposite to Keish, and formerly a place of great commerce; and Chetow is the place written Chetwar by M'Cluer evidently related to the island Schitwar, and placed by him with an anchorage just to the westward of the Darabin. The same site is given to Assetow, in Lieutenant Harvey's<sup>203</sup> chart 1778, and As-Setow is Setowar and Chetwar in another form. This same chart, which marks a village here, marks a second without a name half way between the Darabin and Cape Nabon; and this second is the place called Shevoo by Captain Simmons<sup>204</sup>. "About half way from hence [the Darabin] to Cape Nabon is "Shevoo<sup>205</sup>, where good water may be got." These are his

<sup>200</sup> Has he not confounded Asselo with the Assetow of our charts?

<sup>201</sup> So d'Anville writes, and Anamin, Ilan, &c. from the Latin authorities, he follows.

<sup>202</sup> See Niebuhr. M'Cluer writes Astola, like the island on the coast of Guadel.

<sup>203</sup> In a chart comparing Harvey with Cant, and C. Russell by Dalrymple.

<sup>204</sup> Ives, p. 205. mentions Shewee previous to Nabon, as a small fishing-town. His account is not distinct.

<sup>205</sup> See Dalrymple's Preface, p. 13, note.

own words, and here, unless Shevoo<sup>206</sup> is misapplied, we get a situation from Harvey, and a name from Simmons. The position of this village, be its name what it may, answers to the Apóstani of Arrian, and the facility of obtaining good water here, is a sufficient reason for finding it frequented by the country vessels in the age of Nearchus, or at the present hour. The general distance given from Mount Okhus to Nabon by the journal is fifty-three miles divided into two courses, one of four hundred and fifty<sup>207</sup>, the other of four hundred stadia, and agrees with M'Cluer's corrected chart within three miles; we cannot, therefore, commit any error that affects the series, in placing Apóstani by the measure given, or reducing it to the Shevoo of Captain Simmons. The name itself has a Greek appearance, but is undoubtedly not Greek; nothing, therefore, forbids us to suppose it may be Abu-stan<sup>208</sup>, like Abu-schaib, Abu-sháhhr, and other similar compounds on the coast; or to assume a corruption justified by its locality, and derive it from Asbán. My own opinion inclines to the latter; and if this should meet with the approbation of Oriental readers, we are obliged to Mr. Niebuhr for first producing the name of this range, which solves three problems at once; the Dara of Ptolemy, the Darabin of modern geography, and the Apóstani of Arrian, all from Dahhr-Asbán<sup>209</sup>.

<sup>206</sup> The reason for supposing Shevoo may be misapplied is its resemblance to Sherouw and Chetow. At Sherouw below Darabin, Van Keulen writes,—*hier is water van kuylen*, in pits or tanks.

<sup>207</sup> Twenty-eight and twenty-five miles.

<sup>208</sup> *The Sheiks' country*. Abu and Sheck are equivalent in Abu-Schaib, Schech-Schaib.

<sup>209</sup> Dahr, Daber, and Dabra, signifies a

mountain, in the Ethiopic and several other Oriental languages. Dahr Asbán is therefore Mount Asbán. See Ludolphus. Abyssinia, book i. c. 4. book iii. c. 4. And Bruce *passim*. May not the primary meaning of Dahr be *head*, like our British *Pen*? and thence Rab-dahr, Choob-dahr, Ser-dahr, *head* or chief officers respectively?

From Apóstani the fleet weighed at night, and proceeded twenty-five miles to a bay, on the borders of which were seen scattered villages, adorned with palm-trees, and others yielding fruits<sup>210</sup> similar to those of Greece. Here Nearchus anchored, under the projection of a cape which rose to a considerable height. The cape is manifestly Nabon, and the bay is formed by the mouth of the river which bears the same title. The point of this cape<sup>211</sup> is very remarkable, being flat table land, which extends a considerable way, and then breaks off to a sharp sloping point, which makes the table land appear lower than it is; the river which comes in here runs parallel with the coast, and is at present the residence of an Arab Sheik, who is master of a few small vessels, which he employs in piracy. Thevenot<sup>212</sup> mentions it as a place still abounding in palm-trees, with a village on a low bank of the river; and the high land commencing near the cape extends far inland. The term used by Arrian expresses the anchorage of the fleet under cover of the table land at the foot of the mountain; which, with the circumstances of a bay, villages, and fruit-trees<sup>213</sup>, makes the correspondence exact. It has been observed already, that here is the Bágrrada of Ptolemy, which he places in latitude 21° 54', and the head of it in 35° 15', but by its course at the cape it

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A BAY at  
CAPE  
NABON.  
January 9.  
Day 9,  
or 100.

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<sup>210</sup> ἀκρόδεννα. Salmasius says, only nuts, almonds, and such as have a shell without and fruit within, p. 108, et seq. But see Theophrastus: ἀμπέλως καὶ τὰλλα ἀκρόδεννα, *ibid*.

<sup>211</sup> Lieutenant M'Cluer, p. 21. Lieutenant Cant, p. 22. In Mr. Dalrymple's Collection.

<sup>212</sup> D'Anville; but I have not found the passage in Thevenot.

<sup>213</sup> Mr. Jones mentions the Nabon as a large river; and such it ought to be from the

extent of the mountains. Ives notices the same circumstance, p. 205. Here Providence seems to have allotted a spot of ground amidst inhospitable rocks and deserts, capable of affording the kind production of vegetables, &c. &c. Ives, p. 205. In the river, a ship of nine hundred tons may ride. The Portuguese had once a settlement here. *Ibid*.

Shaw says, Nabon or Bágrrada signifies a pond; but I cannot recover the passage.

ought to incline in the contrary direction, though I can find no information either in travellers or voyagers to give its tendency correctly. That the coast is little frequented appears by the discordance of the charts, and the routes inland tend to Bendereek, Lar, or Gomeroon, either on the east or west, with little attraction even for merchants either to Nachelo<sup>214</sup> or Nabon. The latitude of Nabon is fixed by Dalrymple for 27° 27' 26".

GOGANA.  
January 10.  
Day 10,  
or 101.  
Day allowed.

Upon departing from Nabon, the fleet proceeded upwards of thirty-seven miles to Gôgana, a distance which answers within a mile to the position of the modern Konkûn or Congoon, remarked by M'Cluer for a high ground over it called Barn-hill from its appearance, and as being the northernmost town in the bay<sup>215</sup>, which curves to Verdistan. Between Nabon and Konkûn lie Asselo and Tahrie; whence, he says, this bay runs deep up to Konkûn. The whole of this day's course is sheltered from the north-west blasts by the projection of Cape Verdistan, and the foul ground in its neighbourhood. This ground is noticed by the journal, as lying round the anchorage in a circle, and discovering itself with a dangerous appearance at low water. Gôgana is described as a place inhabited upon the side of a winter torrent called A'reon, in the mouth of which the fleet anchored with great difficulty, both on account of the narrowness of the entrance, and the dangerous shoals which almost preclude an approach to it. This torrent does not appear in any chart or map, except d'Anville's, in which it is doubtless placed from the authority of the journal, and probably exists in reality, though, from the little knowledge we have of this

<sup>214</sup> Pietro della Vallé mentions some Armenians who intended to land at Nachelo in order to go to Shiraz. Vol. viii. p. 20. This route falls into the ancient road to Siraff. Nub. Geo. p. 125.  
<sup>215</sup> Astola, Taurie, M'Cluer, p. 22.

tract<sup>216</sup>, or the insignificance of the stream, it has not drawn the attention of our English navigators. It is some satisfaction, however, to find a name resembling Konkûn so nearly as Gôgana; and as Niebuhr makes it the residence of an Arab Sheik, it is perhaps of more estimation with the natives than with those who frequent the gulph, and whose only object is commerce.

The course of the following day was fifty miles to the Sítakus, which it would be well if the journal had increased considerably, for the coast itself measures that distance, without allowing for the circle that must be taken round the shoal off Cape Verdistan. It is not probable that an English vessel should ever determine whether there is a passage within the breakers; but within, undoubtedly, Nearchus must have sailed, to make the stadia consistent: and though M'Cluer makes an anchorage almost in the centre of them, a passage close to shore must be dubious, unless it could be proved that it is still practicable for native vessels. There is an island called Mongella, lying to the eastward of Verdistan, only three miles from the main, within which if there be a passage, it must have been seen by the fleet: but that it is passed in silence, or the cape itself, is no proof that Nearchus stood out to sea; for omissions of this sort are frequent. It is only meant to argue, that if there is a passage within<sup>217</sup> the shoal, the measure of Arrian is correct; if there is no passage, it is the first on this coast which has been deficient. Mongella is the Palmeira<sup>218</sup> of the Portuguese, the Om-en-châle<sup>219</sup> of

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SÍTAKUS  
RIVER.  
January 11.  
Day 11,  
or 102.  
Day allowed.

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<sup>216</sup> "A vessel must be cautious of standing up too far in this bay." M'Cluer, p. 22. See Niebuhr also, who says it is the most dangerous part of the gulph.

<sup>217</sup> "From Mongella northward to the bay, in by Kenn, I never have examined in any

"vessel." M'Cluer, p. 25.

<sup>218</sup> So named possibly from finding the palmeira or toddy palm tree on it.

<sup>219</sup> Rather an island. Om-en-châle, answering to an Om-en-châle on the continent. Nieb. vol. ii. p. 168. French edit.

Niebuhr, though he marks no island, and his Ras-el-chân, or Cape Chân, is the Kenn of our English charts, the Kaneh-Sitan of d'Anville, remarkable for the hummocks over it, which form a landmark to vessels upon their approach to Verdistan: here is the anchorage of the journal at the Sítakus, a stream which d'Anville calls Sita-Reglian; and I shall conclude my observations on the course with noticing, that as the tide rises<sup>220</sup> ten feet here, it is possible that Nearchus found his way through the breakers<sup>221</sup>, shoals, and oozy channels, he so graphically describes: such, he says, was the nature of the coast, and such it appears in the charts at the distance of two thousand years: but if the approach to this station was difficult, the anchorage was indifferent; the fleet, however, wanted repair, the vessels were consequently drawn on shore, and the time employed in refitting and careening was no less than one-and-twenty days; during which interval, they received a large supply of corn, sent down by the command of Alexander. From this circumstance we may conclude, that the detachment under Hephêstion was in the neighbourhood; and, (as I collect from Alfragani<sup>222</sup>, Golius, d'Anville, and Otter<sup>223</sup>), at Giouar, or Firouzabad, an inland city, the capital of the district Ardeshir, celebrated for its gardens, vineyards, and roses, as pre-eminent in Persia as those of Pêstum in Italy. I fix upon this place, because I learn from Otter, that the river of Giouar receives a stream called Sita Rhegian<sup>224</sup>, which may be interpreted the sandy

<sup>220</sup> M'Cluer.

<sup>221</sup> βράχια, shoals; πηχίαι, broken water; τινάγαι, shoals with ooze or mud.

<sup>222</sup> Gol. ad Alfragan, p. 114. Founded by Ardexir, son of Babec, son of Sasun. An El-burz, or fire-tower of the Parsees, was in this

city. Gour signifies a sepulchre.

<sup>223</sup> Otter, vol. i. p. 191. I found this account by accident in Otter, strangely placed in a route from Hamadan to Ispahan.

<sup>224</sup> Raiguan. Otter.

Sita, and, with a final aspirate, becomes Sitahh, or the Sitahk of Nearchus. The Eastern writers mention, that Alexander took this city by inundating it with the waters of the river. This could not happen, for Alexander himself was on the other side of the mountains; but his army under Hephêstion might have taken it by this method; and the permanence of the tradition affords some sort of proof, that Hephêstion was at this city, as I have stated. The roads which branch out from this centre evidently mark it as a capital; and when we reflect that Siraff and Keish were formerly the Gomeroon and Ormus of the gulph, we see the necessity of the communications extending from this centre to the coast at Siraff, and inland to Shiraz; to Lar on the east, and to Raghian on the north-west; in this latter line it is evident that Hephêstion, with his division of the army, was moving. We have before attended him across the mountains from Giroft to Lar, and we have here a route from Lar through Giouar<sup>225</sup> and Kazon to Ragian on the river Tab or Endian, which is the boundary between Persis and Susiana. In Susiana Hephêstion rejoined the main army under Alexander, who seems to have moved by the route of Velaz-Gherd, the western Phoreg, Pasagardæ, and Persépolis, till he fell into the road by which Timur came from Susiana to Shiraz, and trod this ground in a contrary direction, till he reached Susa, the ancient capital of the province. These marches of the two divisions will be farther considered hereafter upon the arrival of the fleet at Susa; at present they are only noticed, in order to connect the motions of the fleet and army, upon occasion of the supply re-

<sup>225</sup> In the route of Al-Edrisi, from Shiraz Giouar, though Lar is on the left, and not to Siraff, we discover the road from Lar to mentioned. See *infra*.



ceived at Sítakus. The time which the fleet continued here is longer than any interval hitherto employed upon the refitting of the vessels; and we ought for this reason to suppose that they waited for the approach of the army, or the collection of the supply. The reason of this must evidently be, that the distance from Giroft to Giouar is upwards of three hundred miles, a march which, in this climate, could hardly require less than four or five and twenty days, even if Hephéstion moved on the same day with Nearchus; eleven<sup>226</sup> days navigation, therefore, and twenty-one days in port, give a period almost necessary for the service required; and this allowance combines the motion of the fleet and army in a manner correspondent to reason, and not contradictory to the history of the transactions.

Cape Verdistan<sup>227</sup>, with its shoal tending out to Kenn, is one of the most prominent features in the gulph; English vessels, however, which are generally bound to Busheer, or Basra, having no other business but to avoid<sup>228</sup> it, we have no right to expect any immediate account of the coast itself at this point: but the anchorage at Sítakus, d'Anville has elucidated<sup>229</sup> with particular attention; Kaneh Sitan, he informs us, signifies the habitation of Satan; and the river Sita-Reghian<sup>230</sup> has evidently an allusion to the same prince of darkness; an extraordinary instance of his early influence in this country, and the duration of his empire. Whether Nearchus found the territory of Satan an agréable residence for one-and-twenty days, I pretend not to

<sup>226</sup> Twelve days inclusive.

<sup>227</sup> Bardestan, Bardestrand, Van Keulen, Babestan, D'Après, 1745. Burdistan, Capper; who calls it a mountain.

<sup>228</sup> See M'Cluer, p. 24, 25. All his directions are how to avoid it with safety.

<sup>229</sup> Lieutenant Cant gives a bay here, and Harvey, a river. Claud Russell's chart calls the river Jareu.

<sup>230</sup> The Sitiagogus of Pliny, p. 136. lib. vi. 22. deserves no notice; he says it is navigable up to Pasagarda.

determine ; but, from the good-will I bear him, I regret to find him in a place with a name of such ill omen. Reghian is not quite perspicuous, as there is another Reghian on the Tab or Endian, and a Bender-Regh, which is the Rhógonis of Arrian. It is probable that the etymology of the word, which signifies sand, will explain all three ; but I have looked in vain for more Reghians than one in the Nubian Geographer. The Giouar of that author on this river<sup>21</sup> throws great light on the march of Hephéstion, and the supply received by the fleet, because the measures taken from Shiraz, Kazeron, Siraff, and Reghian on the Tab, all correspond with some degree of correctness, and the use Mr. d'Anville has made of these in his first map of Asia bears the highest testimony to his judgment and penetration. It is upon this occasion that he introduces his remarks upon the rivers of Persis, demonstrating that none of them beyond the mountains ever find their way to the sea ; and shewing that those which have occurred in Arrian bear the characteristic mark of torrents, as he describes them, never rising beyond the great range, and fed only by the rains which fall there too periodically to support a perennial stream. When we see the face of nature painted so justly, who shall assert that the journal before us is the production of a Greek sophist in his closet ? One circumstance only surprises me in d'Anville, which is, that he should mistake the Bagrada of Ptolemy ; for as he has himself placed the Taoké of that author, with great apparent propriety, at Gennaba, and his Chersonêsus at Busheer, or Bender-Rischer, his Brisóana ought to be the river at Kierazin, to which it bears a relation, however corrupted ; his Ausinza<sup>22</sup> naturally becomes

<sup>21</sup> Al Edrissi does not mention the river.

<sup>22</sup> Written Stausinda by Marcian, p. 19.

Ausizan, or Verdi-stan, and Bágrada of course is the next river<sup>33</sup> at Cape Nabon. In tracing Ptolemy's catalogue thus from Cape Jasques to the termination of Persis, I persuade myself that I not only add perspicuity to this immediate work, but perform a service useful to geography, and acceptable to every lover of the science.

—  
HIERATIS.  
February 1.  
Day 32,  
or 123.  
—

An interval of one-and-twenty days passed at Sítakus, brings our account to the first of February, and on this day I fix the departure of the fleet for Hiératis. The course is nearly forty-seven miles, which terminates at the Gilla or Halilah<sup>34</sup> of M'Cluer, with a sufficient degree of correctness, and where d'Anville finds the Kierazin<sup>35</sup> of the Turkish Geographer. The fleet anchored in the mouth of a canal called Herátemis, cut from a larger river at no great distance, which is doubtless the stream that comes from Kazon<sup>36</sup>; and Kazon as undoubtedly is the root of all the corruptions which appear under the form of Kierazin, Hiératis, and the Zezarine of the English charts. The stream<sup>37</sup> itself, in its source at least, is called Sekan by Ebn Haukal; it was passed by Thevenot<sup>38</sup>, in the neighbourhood of Karzerum<sup>39</sup> (as he writes it), in his route from

<sup>33</sup> There is no other between Verdistan and Nabon but the torrent A'reon, too minute for all our charts and maps to notice.

<sup>34</sup> Halileg or Helileg is the Arabic name of Myrobalans, a sort of plumb used by the Orientals in medicine. Perhaps the plant which produces this fruit is found here. See Salm. 1323.

<sup>35</sup> This is the only mark I find in his chart. Gilla is a town. Halilah, or Halilat, a hill, which serves as a direction for entering Busheer harbour. It takes its name from the town marked Halila in Niebuhr.

<sup>36</sup> See Kousher of Thevenot, Niebuhr, &c.

<sup>37</sup> Kazon has an additional title, the country of Sapor; and is the head of that division of Persis called *Sabur*, or Sapor, by d'Anville. *Gol. ad Alfragan*, p. 115. not. It is not, however, the capital, for that he calls Sabura, from Sapor or Shabor.

<sup>38</sup> If Thevenot obtained this name from his muleteers, or from the peasants of the country, they meant to tell him as the name of the river, Aúb-e Genowee, that is to say, the river of Genowee; calling it so, from its falling into the sea at that place. Mr. H. Jones.

<sup>39</sup> Thevenot, part ii. p. 149. It flows within a mile and a half of the town, and

Schiraz to Bender-Regh. The variations occurring in this name flow two different ways from the same source, for Kaseroon<sup>240</sup> first becomes Kazerene, Kezarene, Zezarene, Brizoene<sup>241</sup>; and secondly, Kerazene, Kierazin, Kierad-sin, Hierat-sin, Hiérat-is, and perhaps Heráten-is, or Herátemis: but I do not maintain that both are the same, for Kazeroon<sup>242</sup> is upwards of fifty<sup>243</sup> miles inland, and the Kierazin of the Turkish Geographer is on the coast; but I suppose both to be connected by means of the district or the river. D'Anville has observed, that Kierazin on the coast appears not in the modern maps, but that the name exists in our English charts under the form of Zezarine, applied to an islet nearly fifty miles out at sea. This is true; but at the time he wrote, neither this isle, nor another called Kenn, were laid down with any degree of correctness. We have since obtained their position, from an observation of Captain Moore; Kenn<sup>244</sup> in latitude 27° 54', and Zezarine in 28° 8'. Kenn is a round bank of sand scarcely half a mile in length, and Zezarine<sup>245</sup> something larger, with a rock in the middle; both are

was apparently passed by a bridge about six miles lower. The town is large, but ill built.

The present city of Kaseroon I do not think can boast of great antiquity; but to the southward and westward there are the remains of the ancient and magnificent city of Shâhbour, with sculptures in relief on the mountains, similar to those of Persepolis. Mr. H. Jones.

May not this be the Taokè of the journal?

<sup>240</sup> Written Kazarun by Al-Edrisi, p. 125.

<sup>241</sup> This is, I conjecture, the relation which Ptolemy's and Marcan's Brisóana has with Kezarene; but it is mere conjecture.

<sup>242</sup> After making this conjecture, I was gratified in finding a demonstration of it in Otter, vol. i. p. 310. where he writes Kiaziran,

Kiaziroun, as the strict Oriental orthography of Kazerun. This, at the same time it proves the perpetual transposition of syllables (so often noticed), as of Kiaziran for d'Anville's Kierazin, unites it with Kezareen and Zezareen, most perfectly. The connexion, therefore, of the town with the river and the shoal is established.

<sup>243</sup> According to my journal from Bushire to Scherauze, in the year 1786, I make Kazeroun distant from Bushire 98 miles. I travelled, however, the same road several times afterwards, and I incline to think the distance not quite 90. Mr. H. Jones.

<sup>244</sup> Dalrymple's Collection, p. 46.

<sup>245</sup> Keyn and Zazareen, M'Cluer.

sixteen or seventeen leagues from the coast. Kenn is likewise called the Cock, or Persia, and Zezarine, Arabia, by the native pilots. And here is a circumstance worthy of remark, which, though it escaped the notice of d'Anville, speaks highly for the penetration manifested in his reference; for Zezarine, the isle, is as certainly connected with a Zezarine on the main, as Kenn is with his Kaneh-Sitan, the Kenn of our English charts. There is another solitary isle called May, upwards of sixty leagues from the coast, in latitude  $25^{\circ} 50'$ , which I mention, in order to shew the perpetual connexion of these little spots with the main; for Al-Edrissi fixes a Mai in the road from Shiraz to Siraff, to which this islet is nearly opposite, and to which it is probably related. I expected to find a Kierazin also in Al-Edrissi, but his routes are always the journals of the caravans, and we seldom have any delineation of the coast.

Arrian has no particulars of Hiératis; but that it was on an island formed by a channel from a river in the neighbourhood, and that an island of this sort, resembling the delta of a river, should not appear in our English charts is not extraordinary, because it would naturally be confounded with the coast; but Mr. d'Anville places an island here, which he writes Cousher, and which is the Coucher of Thevenot. He did not land here; but he says it is a pretty large island, and enables us to form a conjecture of its distance from Busheer, by mentioning that he passed that port between two or three o'clock in the morning, and was off Coucher at half an hour after seven. I trace an account which corresponds with this in Niebuhr, who upon his arrival at Kormudsch, in his route from Busheer to Schiraz, mentions an arm that runs up from Busheer<sup>246</sup> into the interior

<sup>246</sup> Niebuhr, vol. ii. p. 31.

of the country, then turns itself to the south, and falls again into the gulph lower down towards the east. At the place where this stream ought to fall in, his map presents us with Khôre-Esseri<sup>247</sup>, and as Khôre signifies a channel, or division, I have little doubt but this is the Herátemis of Arrian, and that Khor-esser<sup>248</sup> is the Koucher of Thevenot. It is true that Niebuhr is not accurate in his account of the arm which comes<sup>249</sup> from Busheer, for there is no such arm, as Mr. Jones assures me, who resided at Busheer many years; and it is extraordinary that Niebuhr should insert this arm in his own draft<sup>250</sup>, and yet give us Captain Simmons's chart<sup>251</sup>, in which no river larger than a brook is to be found. As Niebuhr never saw this Khôre-Esseri, therefore all that we can collect is, that he gained intelligence from inquiry among the natives, that the circumstance of a river inclosing a delta between two of its mouths existed, and that the eastern channel was called Khôre-Esseri. This, for want of further information, he was obliged to lay down with uncertainty; but that some stream, attended with these circumstances, does fall into the gulph, within the distance of from ten to twenty miles eastward of Busheer, I make little doubt, and such a stream will answer to the Hiératis and Herátemis of Arrian. Mr. Jones is acquainted with a shallow arm of the sea running inland near Halila; and though he doubts the circumstances here attributed to it, it is not impossible that this arm should send off a channel to the eastward.

From Hiératis the fleet proceeded the following morning to.

<sup>247</sup> Probably Khôre-Esseri means Khor-el-Zigeer, Little Khor. Mr. H. Jones.

perly a large arm which he makes fall into Busheer Bay. See his map.

<sup>248</sup> Khôre-Esseri is literally the channel of Esser, and Esser doubtless has a relative sense.

<sup>250</sup> Vol. ii. p. 97. Amst. edit.

<sup>249</sup> I use his own term, but it is more pro-

<sup>251</sup> Vol. ii. p. 75.

MESAMBRIA  
 Town.  
 PADARGUS.  
 PADAGRUS  
 River.  
 February 2.  
 Day 33.  
 or 124.

Mesambria, and anchored at the mouth of the torrent called Padargus. The whole place, says Arrian, is a peninsula, which points out Busheer or Abu-Scheer most correctly; and here there is no distance given, a circumstance<sup>233</sup> recurring constantly whenever the fleet passes a cape, and anchors immediately under the shelter it affords. I should conclude, therefore, if d'Anville does not stand in my way, that Hiératis was at no great distance from the back of this cape to the eastward; that they had anchored there only because they could not double the cape the preceding evening, and had sailed into port as soon as they had day-light. These circumstances do not greatly disagree with the situation Thevenot gives to Koucher, and contribute to relieve the obscurity attendant upon this part of the coast.

Busheer<sup>234</sup> varies as much in its orthography as any place<sup>235</sup>

<sup>233</sup> See anchorages after passing Mount Eirua, Jash, and Tarsia.

<sup>234</sup> I beg to give you the following, as the best account my recollection affords of both these places. Bushire, as it is commonly called by the English, is Aboushahr as written by the Persians, and is situated on a point of land washed by an inlet of the sea. A wall, by which the town is fortified on the land side, renders the figure of it an irregular triangle. The present town of Bushire has been created within these thirty years, in consequence principally of the troubles which took place at Scherauze on the death of the Vakeel Kerim Khan, and of the mild, equitable, and independent government of Scheik Nássir. The vessels which frequent this port, provided they are not above 300 tons burthen, may anchor in what is called the inner roads, though even there they are somewhat exposed to the north-west; and as the anchorage ground is not very capacious, and the bar disagreeable, I have

known but few of the Company's marine officers fond of running into the inner roads. The town may consist of from 300 to 350 houses, most of which are truly miserable. The water in the town is very brackish, and consequently the better sort of inhabitants bring the water they use from the Dutch gardens, or even from Bischer. The town, when I first went to Bassora, enjoyed a great commerce with India, and indeed during the life of Scheik Nássir; but since the decease of the old Scheik, and the accession of his son Scheik Nesser, and the extirpation of the Zund family from Scherauze, this commerce has gradually been on the decay. The town is washed on two sides of it by the sea; and on the land side a sandy desert extends about  $\frac{1}{2}$  or  $\frac{3}{4}$  of a mile. Mr. H. Jones, who was resident several years at Busheer.

<sup>235</sup> Reixel by the Portuguese, who had a fort here. Abbeseer, Van Keulen.

within the gulph, for it is written Bushire, Bischehr, Abbeseer, &c. and is likewise confounded with Rusheer and Rischer, which is a fort at the back of the peninsula, and which gives it the title of Bender-Rischer; but last of all comes Niebuhr, who writes it Abu-Shâhhr<sup>355</sup>, with Rischâhhr<sup>356</sup> at a distance; and thus, probably from his better knowledge of the language, we have the proper<sup>357</sup> name at last.

Whence the Mesâmbria of Arrian is deduced does not immediately appear, for though the word is expressive of *noon* in Greek, we may be assured its origin is not from that language. Arrian describes it as a Chersonese, and Ptolemy and Marcian use that term only without the addition of a name; this induces me to conjecture that both merely translated the native term Mesambria. Now it will appear hereafter that Mesen signifies an island, and is applied as such to a Mesène on the Schat-el-Arab, to another in Mesopotâmia, and to a Muçan in the Sinus Mesanius of Ptolemy. This word, therefore, with the addition of Ber<sup>358</sup>, a *continent*<sup>359</sup>, which we obtain from Montfaucon, produces Mesen-ber-ia, corresponding literally with the Greek term Cherso-nese<sup>360</sup>. I give this only as a conjecture, though the circumstances of the place persuade me that it is something more; and, in support of this opinion, I refer to Captain Sim-

<sup>355</sup> Or Abu-Schæhhr.

<sup>356</sup> Rushire, or Roo-il-Shahr, Cape Shahr, related to Abu-Shahr, is a place of great reputed antiquity, distant from the present Bushire about six or seven miles. The present fort, which I believe was built by the Portuguese, stands on an eminence overlooking the sea, and I have marked on the map with a dot and an R the site of it. It has the appearance of having been formerly a place of consequence; and the present little huts surrounding the fort

are built from the materials of the old town. Mr. H. Jones.

<sup>357</sup> Otter writes it Bender-Ebouchehre, tom. ii. p. 134.

<sup>358</sup> Bar or Ber is *coast*, and usually a low coast below the mountains. Niebuhr, vol. ii. p. 300.

<sup>359</sup> See *supra*.

<sup>360</sup> From χῆρος, a *continent*; νῆος, an *island*, a peninsula.



mons's plan<sup>261</sup> of Busheer, by whose assistance I can carry Nearchus to his moorings in the port, as readily as if I were upon the spot; for in that plan there is a place marked as the watering village, within a mile of an insignificant stream corresponding with the Padargus of Arrian, and in the interval between these two points I suppose the fleet to anchor.

Busheer has been latterly much more frequented by the English than Gomeroon, or any port in the gulph except Basra, for they had a factory here as late as the year one thousand seven hundred and sixty-five, and I know not that it is yet abandoned. The town occupies the angle at the cape, with a fort usually called the Old Town, and sometimes Rischer, at the back of the cape, near five miles distance. The cape is joined to the main by a neck, the narrowest part of which is at the torrent Padargus, forming the Chersonese mentioned by Ptolemy and Arrian; but Niebuhr<sup>262</sup> observes, that the country is sometimes overflowed, so that the town is situated alternately on the continent and on an island<sup>263</sup>; but it is not a little remarkable, that out of three witnesses who have been on the spot, two<sup>264</sup> should assert that the town<sup>265</sup> is walled, as it appears in Captain Simmons's drawing; and a third, M'Cluer, should maintain, that there are not the least marks of defence about the place. It ought not to be omitted that the gardens or plantations which decorate Captain Simmons's chart are noticed by Arrian<sup>266</sup> in a pointed manner, as if the goodness of the soil had produced the

<sup>261</sup> Published by Mr. Dalrymple, and copied in Niebuhr. Voyage, tom. ii.

<sup>262</sup> Thevenot calls it an island, Part ii. p. 172.

<sup>263</sup> Dalrymple's Preface, p. xviii.

<sup>264</sup> Captain Simmons and Niebuhr.

<sup>265</sup> This question is decided by the testimony of Mr. Jones, in note p. 394. who from his long residence there could not be mistaken.

<sup>266</sup> *ἐν αὐτῷ κῆποι τε πολλοί, καὶ ἀκρόδρου πωγῶνα ἰφύετο*, p. 354.

same cultivation so many ages ago, as cheers the country in the present declining state of Persia. This, however, is denied by M'Cluer, who calls the neck a sandy desert, and never cultivated, which is a second instance of contradiction in two eye-witnesses, and respecting the same place. Mr. Jones also confirms the testimony of M'Cluer, and contradicts the assertion of Niebuhr, where he mentions that the neck is overflowed. The country as far as Busheer is still called Kermesir <sup>267</sup> by Niebuhr, that is, the low land, though we see in the drawings here the high land of Halila, as we do at several other points along the coast, at Kenn, Nabon, &c. but which are not sufficient to invalidate the title, or perhaps worthy to compare with the grand <sup>268</sup> ridge which runs inland in a line with the coast. This district, Niebuhr informs us, is inhabited by Arabs, not of the tribe of Beni-Houle, which prevails from Gomeroon to Konkun, but by two clans of long standing, and a third which has intruded itself into the government, named Matarisch, the head of which was in his time Sheik Naser, a chief who had degraded himself by marrying a Persian, and professing himself of the sect of Ali. He possessed a large territory in Kermesir and the island Bahrein, but was a feudatory of Kerim Khan, the master of Shiraz. The harbour <sup>269</sup> is commodious, and vessels <sup>270</sup> ride

<sup>267</sup> The Germeser is certainly much misunderstood by Mr. Niebuhr; for this term applies not only to the level tract along the coast, but to upwards of fourscore miles inland. Kazeroon, at Scherauze, was reckoned in the Germeser. Mr. H. Jones.

<sup>268</sup> Every route and journal bears testimony to the course of this ridge, and the branches from it. Consult Thevenot, Tavernier, Francklin, Cherefeddin, and Ak-Edrissi, Ras-

al-Ashé, *summitatem montis*, p. 125.

<sup>269</sup> Niebuhr, Eng. edit. vol. ii. p. 145. M'Cluer does not speak so well of it.

<sup>270</sup> Mr. M'Cluer's authority, in respect to the port of Bushire, is not to be questioned. Vessels of a small and very small draught of water may do this; but the harbour of Bushire has been gradually chocking up within my remembrance. Mr. H. Jones.

close to the houses, which induced Nadir Shah <sup>271</sup> to have a fleet here in the latter end of his reign, when he had quarrelled with the Sheiks on this side of the gulph, and wanted to interfere with those of Oman and Mascat on the opposite coast.

The mean latitude of Busheer is given by Mr. Dalrymple at 28° 38' 20", which perhaps ought to be read 28° 58' 20", for M'Cluer carries it above 29° as well as d'Anville, and d'Anville has shewn as much judgment in correcting this position with bad information to work upon, as in any part of his valuable memoir.

TAOKÈ  
TOWN.  
GRANIS  
River.  
February 3.  
Day 34.  
or 125.

When the fleet left Mesámbría it proceeded only twelve miles and a half to Taokè, for which I do not allow a day, nor do I think one due. Neither will the distance to Taokè agree, though the double distance of twice twelve miles and a half to Rhogonis, or Bender-Regh, approaches very nearly to correctness; for the bay of Busheer is fourteen or fifteen miles across to the northern point called Rowhla and Rohilla by M'Cluer; and the river Granis, for which he allots a place, is not five miles from Bender-Regh. If, however, the two distances agree, though neither of them singly is correct, we may account for it from the circumstance of their employment in the former part of their course, which was the examination of a dead whale, that seems apparently to have floated up to Rohilla point, and to have grounded on the sands in its neighbourhood. Some of the people approached near enough to measure this monster, and reported it to be fifty cubits long, with a hide <sup>272</sup> a cubit in thickness, beset with shell-fish, barnacles <sup>273</sup>, and sea-weeds, and

<sup>271</sup> See Otter, vol. ii. and J. Hanway's Nadir Shah; but he had no better success against the Arabs than others who have attacked them.

<sup>272</sup> δέρμα φολιδωτόν. *Scaly*, in common acception, but I have not dared to admit it.

<sup>273</sup> λογάδας. *Patellæ* genus. Limpets perhaps.

attended by dolphins larger than are ever seen in the Mediterranean. As this is the second appearance of the whale<sup>274</sup> in these seas, I have not thought myself authorised to omit the circumstance; but as this animal was seen dead, and in a state of decay, he might be deemed rather an inhabitant of the ocean driven up the gulph by the wind or currents. The condition in which he was found I leave to the discussion of the natural historians, or those acquainted with the appearance of the animal in his native regions.

The mouth of the river at which the fleet first anchored is noticed in our English charts, and fixed by d'Anville for the Boschavir<sup>275</sup>, down the borders of which Thevenot travelled in his route from Shiraz to Bender-Regh, and Boschavir is nothing more than another corruption of Busheer or Abu-Schahr, and designates the Busheer river, which falls into the north of the bay, close to Rohilla. Taoké answers to the Tauag of the Nubian Geographer, who places it not upon the coast, but, as Arrian<sup>276</sup> does, a few miles up the stream, thirty-six miles from Kazeron, and the same distance from Gennaba, on the river<sup>277</sup> of that name. Ptolemy has a Taokè, which is farther to the north; and Strabo mentions a palace<sup>278</sup> of the kings of Persia

<sup>274</sup> That whales are seen in the gulph there can be no doubt of, for one of the Company's cruizers (the *Revenge*, I think) coming up to Bussora many years ago, in crossing the bar of the river, saw a whale. The commanding officer ordered one of the guns loaded with a shot to be fired at it; and sometime afterwards, (four or five days,) a dead whale was cast on shore at Maghil, the Company's country-house, about four miles above Bussora. Mr. H. Jones.

<sup>275</sup> This is the river which Niebuhr's map brings into the bay; but no river falls into the

bay. Mr. Jones.

<sup>276</sup> Two hundred stadia, almost thirteen miles.

<sup>277</sup> Called Ab-Shirin by d'Anville. The distance corresponds not at all. Perhaps more properly Aub-e-Genowè, the river of Genowe or Gennoba.

<sup>278</sup> These ruins, though I have rounded Bang nearer than common, though I have passed Bang twenty times in my life, I never either saw or heard of. Mr. H. Jones. But are they not the ruins he describes in his own note not far from Busheer?

on the sea-coast of Persis, by the name of Okè<sup>229</sup>, which is either a corruption or an integral part of Ta-okè. Thevenot<sup>230</sup> describes the river as large, broad, and deep, and adds, that it falls into the gulph near Bender-Regh; but that its mouth is to the southward of that town, and correspondent to the Granis of Arrian, appears from the circumstance of Thevenot's crossing it to the right for the last time, in his way to that town, after having travelled on its bank at intervals for some days, and crossing it repeatedly in the higher part of its course: in winter, he says, it is not fordable<sup>231</sup>.

This river is marked with great precision in M'Cluer's small chart of the head of the gulph, with a place called Nuchlat<sup>232</sup> at its entrance, and here, allowing for the error of half the course, there can be no mistake in fixing the Granis of Arrian. The Granis is the same stream as the Boschavir of d'Anville and Thevenot; that is, it is the river that comes from Grâ, and takes its name from that place, and for this I have the testimony of Niebuhr<sup>233</sup>. "On the second of March," he says, "we passed a river which joins several others, then takes its course towards Grâ, and discharges itself into the Gulph of Persia, between Abu-Schahr and Bender-Regh." This is the river M'Cluer marks by Nuchlat; it is the only one between Busheer

<sup>229</sup> τὰ κατὰ τὴν Ὀκην. Lib. xv. p. 728. D'Anville.

<sup>230</sup> Part ii. p. 148. Eng. edit.

<sup>231</sup> Colonel Capper's journal mentions a ruin still visible from the sea, inland on the mountains of Bang, which the natives say was built by the Greeks, and formerly impregnable. Greeks or Persians are to them alike, and it is possible here may be the remains of Taokè seen from Bang, which is Ptolemy's Taokè, and yet approachable by

the river, agreeable to Arrian's account. Capper, 232.

<sup>232</sup> We do not find the title of Bender Boschavir, which d'Anville gives to this road in any of our English charts, but it must be Busheer.

<sup>233</sup> Niebuhr, vol. ii. p. 91. Amst. edit. This passage is totally inconsistent with his map, where he brings the river from Grâ into the bay of Busheer.

and Bender-Regh, and it can be no other than the Granis of Arrian. So far as concerns the mouth of this stream I have no hesitation, but a great difficulty arises from the position of Grâ and Kazon<sup>24</sup> inland. By their site, the river<sup>25</sup> at Kazon ought to come to the westward of Busheer, and the river at Grâ to the eastward, but I carry the Kazon stream to Hiératis, and that of Grâ to Taokè or Nuchlat; and this I am persuaded is their course; but I dare not assert it in opposition to d'Anville, Niebuhr, and other evidence. It must, therefore, remain a problem in geography till the interior of the country is better known, for I can find no route that crosses these several streams at right angles; and, till that shall be accomplished, their relative situation cannot be determined.

From Taokè, the fleet seems to proceed the same day to Rhogonis, the modern Bender-Regh<sup>26</sup>, and the Bundereek of our charts; its name implies the Sandy Port or Harbour, for such it is, and the soil about it is all sand. Thevenot, who came down from Shiraz to embark here for Basra, informs us, that the town is built along the sea-side, at a place where it runs into a narrow channel, long and winding, but is not deep; and if he had wished to describe a circumstance in conformity with Arrian, he could not have succeeded better, for here the journal indicates a winter torrent and a safe road<sup>27</sup>, which in our charts

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RHO G O N I S.  
February 3.  
Day 34,  
or 125.

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<sup>24</sup> In flying from Shiraz to Tostar Zein, Elabeddin went by the route of Kazon. Cheref-eddin, i. 436. But this will not prove the position, as he probably took a circuit to the east to avoid Timour.

<sup>25</sup> This is true only if Niebuhr's map is correct; for d'Anville places Kazon, as I do, at the head of the stream Hiératis. Niebuhr's map is so incorrect on the coast, that

there is reason to doubt its precision inland.

<sup>26</sup> Bender Rigk. Niebuhr.

<sup>27</sup> The road is formed by an island, and covers a narrow winding channel as Thevenot describes. The river falls in as near as possible to the south-west angle of the town. Thus it is described in a manuscript draft of Lieutenant Mascal's in Mr. Dalrymple's possession.

is protected by an island in the form of a shuttle. On this head, the journal is silent. It is remarkable that Thevenot should add, that it is a day's sail from Bender-Risher, or Busheer, as I have made it; and though I allow that four hundred stadia, or twenty-five miles, is a short day's work, yet it should seem that, as it is from port to port, the natives consider it as such in the present age, as well as in the time of Nearchus. In the term Regh<sup>288</sup>, or sandy, we discover the Rhôg-onis of Arrian, and a river called Rhôg-omanis by Ptolemy, which d'Anville supposes to be the Ab-Shirin of Cheref-eddin, a stream that enters the gulph about twenty miles to the north of Bender-Reghe, marked Gunowah by M'Cluer, and from which d'Anville derives a branch, that is to correspond with the torrent of Arrian at this station. On what authority this is built I know not, and the testimony of Thevenot without it is complete.

Bender-Reghe was apparently the port of communication between Shiraz and Basra, but was always out of the track of ships bound up the gulph, which took their pilot at Busheer, or Karack; besides this, there has been another reason of late years for their not frequenting it, for it was subject to a petty tyrant Meer<sup>289</sup> Mahenna<sup>290</sup>, whose hands were imbrued in the blood of a father, a brother, of two sisters, and of his own children; and who wanted nothing but extent of dominion to make him as great a murderer as Zengis Khan or Nadir Shah. It was this Arab who took Karack from the Dutch in the year one thousand

<sup>288</sup> It is the same term as occurs in Bomba-reck, Bom-ba-reghe, Sable delié of Pietro della Vallé; and this name is usually written Bendereck, like Bombareck.

<sup>289</sup> Meer is an abbreviation of Emeer, and

the singular of Omra, a title of nobility in the courts of Dehli and Persia.

<sup>290</sup> Niebuhr says, he did not kill his father, but suffered him to be killed in his presence.

seven hundred and sixty-five, after they had been in possession of it about eleven years<sup>291</sup>. The Dutch appear never to have found the advantage of holding this island equal to the expence of maintaining it; or else we may well suppose it would have been better fortified than to permit such a chief as Meer Mahenna to wrest it from them. There was, indeed, some trade here, and some confluence of the natives from both sides of the gulph; for they are willing to settle wherever they can find protection; but the reduced condition of Persia, and the perpetual fluctuation of authority at Basra, must, as long as they shall continue, keep the commerce of the gulph in a precarious state, and prevent the rising of any establishment, either here or on the other islands, to the dignity or rank of Ormuz. Karack<sup>292</sup> is the larger of two islands which lie between latitude 29° 10' and 29° 22', off the headland between Busheer and Bender-Regh, abounding in fish and dates, but without corn<sup>293</sup>; and here it has long been the practice of the gulph to take a pilot for Basra. The smaller of the two is named Corgo in our charts, and Khoueri<sup>294</sup> by Niebuhr; at the north end is the watering place, where forty English were cut off by Meer Mahenna in the year one thousand seven hundred and sixty-eight. They were however enemies, and do not so much inflame the account of his cruelties, as his domestic tragedies. Tyrant as he was, with all this blood upon his head, he was not yet thirty years old in the year one thousand seven hundred and sixty-five, when Niebuhr was at Karack; but this monster was afterwards obliged to fly

<sup>291</sup> See the detail of this in Niebuhr, French edition of Amsterdam, p. 149. vol. ii.

<sup>292</sup> M'Cluer. But Thevenot says it produces corn.

<sup>293</sup> The Charedsch of Niebuhr; and Charedsch in Foskat's Vocabulary, signifies *an isle, perhaps, separated from Karak.*

<sup>294</sup> Khouéri means *division or district*; the isle, perhaps, separated from Karak.



from Bender-Regh to Basra, on account of his cruelties, where his head was cut off by the Mutasillim, and sent to Bagdat<sup>295</sup>. Mr. Dalrymple has published a plan of both these islands from a French manuscript, taken in the year one thousand seven hundred and eighty-seven.

BRIZANA  
River.  
February 4.  
Day 35,  
or 126.

From Rhôgonis, the next day's course was twenty-five miles to Brizana, a winter torrent, where it was difficult to find anchorage, on account of the breakers, shoals, and surf upon the coast. These, however, were surmounted upon the tide of flood, but upon the ebb the vessels were all left dry. If, therefore, we should be curious to investigate the question here, what might be the draft of a Greek pentecónterus<sup>296</sup>, or vessel of fifty oars, there are some data for determining it, for the flood rises in the upper part of the gulph nine or ten feet; and if this rise carried them over the breakers, we can hardly allow the largest vessel in the fleet to have drawn more than from six<sup>297</sup> to eight feet water.

Nothing can be more uncertain than the position of Brizana, for though the breakers and shoals may fix it when we attain a better knowledge of the coast, that knowledge may for some length of time be a dubious acquisition; for this part of the gulph lies out of the track of European vessels, and Bender Delem, the only name that intervenes, though a place of some trade<sup>298</sup> to the natives, is not likely to be visited by any of our

<sup>295</sup> Niebuhr, vol. ii. Voyage. French edition of Amsterdam, p. 161. note; probably about 1770.

<sup>296</sup> How the oars were placed in the triremes, &c. of the ancients is a point much contested; but in the pentecónterus they were all in one line, twenty-five on a side: the representation of which is preserved with accu-

racy in the Palestrine marble.

<sup>297</sup> They could not draw more, but might draw less, and that I believe is the truth.

<sup>298</sup> A considerable commerce in dates and grain is carried on between Delem and Basra. Mr. H. Jones. See also McCluer's Memoir, p. 31.

countrymen, unless some one, like Mr. Jones<sup>m</sup>, should pass this way in a boat or vessel from Busheer or Bender-Regh to Basra. Brízana resembles the Brisóana of Ptolemy in form, but cannot accord with it in position; for his Brisóana lies both in his catalogue and in the map, as well as by its latitude between the river Nabon and Busheer, which he calls the Chersonese; but the Brízana of Nearchus is evidently above Busheer and Bender-Regh, and therefore unless the Brisóana of Ptolemy has been transposed from the east to the west of his Chersonese, which is an error sometimes incurred by that geographer, Brízana has no affinity to it except in name.

A circumstance still more discouraging is, that the measures are neglected in the journal; for we have only eight hundred stadia specified from Mesámbría to Brízana, and none from Brízana to the A'rosis; but eight hundred stadia are short of fifty miles, while the real distance from Mesámbría to the A'rosis, with the winding of the coast, is above an hundred and forty. In these two points we cannot be mistaken; and therefore, besides the omission of the interval between Brízana and the A'rosis, there must be some defect in the journal, for which it is now impossible to account.

The Sôphath of Marcian, the Sôphtha of Ptolemy, is an island that may represent the modern Karack; and to this I looked for a solution of the difficulty: but the position of it is so ill defined, that I could determine nothing, unless it was that it is really Karack, though not without suspicion that the Arákia of Ptolemy, which I have before supposed, with d'An-

<sup>m</sup> Mr. Jones made this passage several times along shore, and I could wish he had mentioned any shoal in this part.

ville, to be L'Ara or Busheab, may possibly be Karack, by the addition of an aspirate, as Harak, Karak. The error of situation<sup>300</sup> is no obstacle to this supposition, but I give it as a mere conjecture.

It is with regret that I leave this station without satisfaction to myself or information to the reader; but as Delem is the only place of note between Bender-Regh and the Arosis, however the position or measures may disagree, nothing better occurs to offer on the question: and it is at least some consolation to reflect, that no other anchorage within the gulph has been passed, without a probable assignment of its actual position at the present hour.

—  
AROSIS  
River.  
February 5,  
Day 36,  
or 127.  
—

From Brizana, the next day's course is to the A'rosis, a river sufficiently conspicuous, as being the boundary between Susiana and Persis; a privilege it maintains in modern geography as well as ancient; and Arrian adds, that it was the largest of all the rivers which Nearchus had yet met with in the Gulph of Persia. It is called the Endian in our modern charts, from a town at no great distance from its mouth; and Ab-Argoün by Cheref-eddin; out of the component parts of which, A'r-osis preserves but a single syllable, and that perhaps not legitimately, for Ab-Argoün is<sup>301</sup>, as I suspect, Ab-Ragoun, the river of Ragoun or Ragian, a town of considerable importance on this stream, between thirty and thirty-five miles from the sea. In its lower part it is called Tab<sup>302</sup> by the Oriental writers, who al-

<sup>300</sup> Ptolemy, p. 150. Σαφθα, 29° 20'. Fares et Churestan estque urbs pulchra, p. 123. Ἀλιζάνδρου, ἡ καὶ Ἀρακία, 29° 0'.

<sup>301</sup> Araghian approaches to Argoun. D'Anville. On the Tab there is a bridge a bow-shot from the town. Al-Edrissi. Ragian terminat

<sup>302</sup> The Tab receives several rivers out of Khousistan. Otter, vol. ii. p. 49. Who adds, that the province is very hot, but abounds in dates, grain, fruits, sugar, &c.

ways speak of it as a stream of consequence, and Ab in this word is apparently the river, pre-eminently above others on the coast. Endian is a village, or rather a knot of villages, fifteen or sixteen miles from the sea, from whence this stream derives the name by which it is known to the Europeans. The course and nature of the A'rosis<sup>203</sup> will be considered hereafter, with the other rivers of Susiana, when we come to treat of that province; at present our concern is with the coast, and as no distance is given from Brízana to the A'rosis, and one much too short from Rhôgonis to Brízana, an obscurity must rest upon this part of the course, till we are enabled to elucidate it upon farther information. It is however necessary, as we are arrived at the termination of the province, to consider the total of Arrian's stadia, and examine how far they agree with, or differ from, the actual extent of the coast. The numbers, such as we have them in the journal, stand thus:

<sup>203</sup> Ex parte meridionali Churestan fluit exonerant sese in mare prope urbem Mahruian, amnis Tab, dividens ipsam Churestan a Fares, non procul ab arce Mehdi. Geog. Nub. et omnes aquæ Churestan in unum confluentes p. 123.

*From the Centre of KATAIA, or KEISH.*

Ancient Name.	Modern Name.	Stadia.	Miles English.	Stadia allowed.	Miles Eng. allowed.
To Ila or Kaikandros,	Inderabia,	400	25		
To an island <sup>304</sup> ,	Schitwar,	—	—	320	20
To the main <sup>305</sup> ,		40	2½		
To Ochus <sup>306</sup> ,	Darabin,	—	—	40	2½
To Apóstani,	Asbân. Shevoo?	450	28		
To a bay,	Nabon River,	400	25		
To Gôgana,	Konkûn,	600	37½		
To Sítakus,	Kenn,	800	50		
To Híeratis,	Kierazin,	750	46½		
To Mesámbría <sup>307</sup> ,	Bushceer,	—	—	400	25
To Taokè,	Nuchlat,	200	12½		
To Rhôgonis,	Bender-Regh,	200	12½		
To Brízana <sup>308</sup> ,	Delem,	400	25		
To the A'rosis <sup>309</sup> ,	Endian,	—	—	800	50
	Stadia allowed,	4240 1560	264½	1560	97½
	Total of stadia,	5800			
	Miles allowed,	—	97½		
	Total of miles,	—	362½		

From this table we are first to observe, that 362½ miles English amount to 5800 stadia within a quarter of a mile, and yet, with the allowance made from the measure given by the English charts, I am not enabled to bring the total up to the actual extent of the coast; for the mere opening of the compasses gives

<sup>304</sup> Distance by the chart.

<sup>305</sup> From the point of Schitwar (Σκη) to the eastern side of the Darabin.

<sup>306</sup> From the eastern side of the mouth of the Darabin to the western.

<sup>307</sup> Allowed from the eastern side of Kousher, but dubious.

<sup>308</sup> If Brízana is Delem, this day's course is too short by ten miles, compensating for half the difference on the coast of Persia,

between Arrian and the charts.

<sup>309</sup> The distance allowed is taken from the charts between the Endian and Delem, and is one reason for supposing Brízana to be at Delem; for if it is to be referred to Gunowah, it measures eleven hundred stadia,—a day's course never occurring in the gulph, or in any part of the voyage except on the coast of the Ichthóphagi, in cases of extreme distress.

five degrees and an half, equal to 382 miles English, so that there is still a deficiency of twenty miles, without allowing for the course of the fleet. The total of Arrian is 4400 stadia, disagreeing, as usual, with his particulars; neither can his omissions be compensated by 160 stadia; for the omissions taken from the chart, and reduced into stadia, amount to 1560. These I have measured carefully, but precision is unattainable; and though some advantages may be taken in measuring single intervals, in order to obtain a nearer correspondence, I shall not force it upon the total, but trust to the indulgence of the reader; hoping that twenty miles upon the 382 will be deemed a minute error, in comparison of those we usually meet with in ancient geography. Strabo<sup>310</sup> accords with Arrian, or at the utmost within 100 stadia; but Pliny makes the coast 550 miles, an excess which causes this single province to transcend<sup>311</sup> the measure of the whole gulph. I shall do a pleasure to those who have not seen d'Anville's Memoir, in producing here a specimen of that geographer's penetration. "Doubtless, (he says<sup>312</sup>), "Pliny drew from the same source as Arrian and Strabo, for he "read 4400 stadia, and then converting these into Roman miles "of eight stadia, the divisor produced exactly 550 miles, as it "stands in his text." If Pliny had calculated the omissions, and found the whole amounting to 5800 stadia, as I have proved they do, his produce must have been 725 miles; an enormity equal to his measure of the Indus.

In regard to the rivers of this province, I cannot pronounce

<sup>310</sup> Strabo, p. 727. There is an error in the reading, but it seems to indicate four thousand four hundred or four thousand three hundred stadia.

<sup>311</sup> He makes the whole gulph eleven hun-

dred and twenty-five miles. According to d'Anville's method, he must have read nine thousand stadia, equal to five hundred and sixty-two miles, in reality.

<sup>312</sup> Lib. vi. c. 25.

any thing certain on their course inland. I trust to every traveller for the stream he passes in his route, but there are great difficulties in giving them the course found in their works, and which they most usually derive from the information of the natives. The nature of the country will naturally produce temporary torrents from every valley between the mountains; but how these are afterwards combined, and under what name they reach the sea, must be dubious, till travelling shall be more safe and frequent than it is at present. Of the Darabin and Nabon rivers we know nothing but their mouths. The Sítakus seems well arranged by d'Anville, as the stream that comes from Giouar, and collects all the torrents in the district; but the Kierazin is subject to all the difficulties which have been already stated.

The Boshavir or Busheer river of Thevenot is elucidated with great attention in his route, but it falls into the sea just to the north of Busheer, as d'Anville gives it: it is by Thevenot's account no ordinary stream. The Ab-Chirin of d'Anville, which he brings in at the Guenowa of our charts, is not, as far as I can judge, correct; it seems to be the stream of Delem, the Brizana of Arrian. Of the A'rosis more hereafter. Almost all these streams Arrian calls Winter<sup>33</sup> Torrents; and, so far as they all rise from the range of mountains inland, such they are: but the rains fall in this range, as far as can be collected from the variety of materials before me, in April, May, and the early part of June; there is little rain in the Kermesir, or hot country next the sea, and some years none at all. These circumstances seem to give a common characteristic to all these rivers, and to

<sup>33</sup> χειμάρρις.

qualify them with the name of Winter Torrents, though their rise is in spring, and consequently Nearchus, who was upon the coast in February before the rise commences, speaks agreeably to the nature of the country, when he mentions some of them as too low and shallow to float even a Greek vessel in that season.

Nearchus has preserved likewise most admirably the general features of the province, which he divides<sup>314</sup> into three parts; that division which lies along the side of the gulph, he says, is sandy, parched, and sterile<sup>315</sup>, bearing little else but palm-trees, which corresponds exactly with the Kermesir<sup>316</sup>, and the accounts of all our modern travellers; but as you advance to the north or north-east, and pass the range of mountains, you find a country enjoying an excellent temperature of air and pleasant seasons, where the herbage is abundant, and the meadows well watered, where the vine flourishes, and every kind of fruit tree except the olive. Here the kings and nobles have their parks<sup>317</sup> and gardens; the streams are pure and limpid, issuing into lakes which are stored with aquatic<sup>318</sup> fowls, of all the different species. The pasture is excellent for horses and domestic cattle, while the woods supply an ample variety both for the support of man and for the chace. Such is the picture<sup>319</sup> set before us, and such

<sup>314</sup> The same division is made by Strabo and Dionysius Perieg.

<sup>315</sup> Strabo, p. 727.

<sup>316</sup> This tract is noticed by Pliny, lib. vi. c. 29. Hard. under the name of Syrtibólus, which Hardouin explains, Σύρτις, arenosus locus, and βέλος gleba. See note 97. I have retained Kermesir, which is the orthography of Niebuhr; but Mr. Jones writes it Ghermeser, which I conclude is more correspondent to Oriental authority.

<sup>317</sup> Sheib Bewan, rivulet Bewan, near Nou-

bendgian, is one of the four Eastern paradises. D'Anville, p. 176.

<sup>318</sup> This minute circumstance, noticed by Arrian, is mentioned also by Le Bruyn.

<sup>319</sup> Even in the present decline, the country is so beautiful, that Francklin, after passing the last ascent, and obtaining a view of this part of the province, bursts out into a vein of poetry, the effect of his sudden transition from the parched level of Kermesir, and the rudeness of the mountains.



ever was this country while it was under the protection of a regular government. The lakes alluded to are doubtless the Lake Baktegian and a smaller one near Shiraz ; and the streams which terminate in these, and never find their way to the sea, are as evidently the pure and brilliant waters he describes with the same luxuriant fancy as a poet of Shiraz<sup>320</sup> might have painted them at the happiest period of the empire. But how is this picture now reversed ! War and tyranny have spread desolation all around : It is not the destruction of Persépolis<sup>321</sup> we lament over in surveying the ruins of Chelminar, or Estakar, while we accuse either the ebriety or insolence of a conqueror ; it is not the tomb of Cyrus at Pasagardæ plundered and overthrown by an avarice natural to soldiers in the hour of victory, or natives in despair ; but it is the fate of a province we deplore, which once furnished the bravest troops of Asia, which abounded in every gift that agriculture and industry could produce, which rose above the barbarism of the East, and was celebrated for its poets, its philosophers, its beauteous<sup>322</sup> race of women, its men, as comely in their persons, as polite<sup>323</sup> and elegant in their manners ; its merchants<sup>324</sup>, who trafficked to the extremities of the East ; and its superior culture of the vine<sup>325</sup>, the only excellence

<sup>320</sup> Shiraz is famous for the best Persian poets.

<sup>321</sup> Arrian, p. 131, says, that Alexander burnt it in revenge for the burning of the Greek temples : but it is hardly a better cause for turning incendiary than the suggestion of a courtesan. Strabo says nothing of Thais, but accords with Arrian, p. 730.

The story of Thais persuading Alexander to burn Persépolis is from Clitarchus. Athenæus. Lib. xiii. c. v. Ed. Schweig.

<sup>322</sup> The exquisite beauty of Persians, both men and women, is noticed by Herbert,

p. 135, and by Ebn Haukal, p. 115.

<sup>323</sup> At the present hour I cannot find that, in comparison with other Asiatics, the Persians have declined from this pre-eminence, except that they are accused of fraud and dissimulation : two vices, the natural produce of despotism, and polite manners in a state of decadence.

<sup>324</sup> The two goldsmiths of Timour were natives of Shiraz. *Arabsia*, tom. iii. p. 873.

<sup>325</sup> Shiraz wine is still in as high estimation throughout the East as it appears in the poetry of Sadi. I once tasted it, and thought it re-

which despotism has not annihilated. At the present moment, the villages have ceased, and there are no travellers in the highways. The capital is in the possession of a Kurd<sup>326</sup>, a robber both by birth and profession; and of the distraction consequent upon the death of Nadir Shah there seems to be no end.

There is still a third division of Persis towards the north, comprehending the mountainous country, which is wild, rugged, and inhabited by barbarous tribes, where the air is cold, and the summits covered with snow<sup>327</sup>. The barbarians are the ancient Uxii, or modern Asciacs; and the range called Louristân divides Persis from the ancient Media. Ispahan, the modern capital of the empire, is just to the north of this chain, and not in Persis. These mountains extend equally on the north of Susiana<sup>328</sup>, and send down those streams which pass through that province either into the Tigris or the Gulph of Persia; while the more eastern part furnishes the torrents which water Persis, and all sink into lakes, or are exhausted by derivations for the purposes of agriculture. One of the largest of these streams, called Bend-Emir<sup>329</sup>, or the Noble River, falls into the lake Backtegian (the Dirje Nemch, - or brackish sea), twelve leagues from Persépolis, and four or five from Shiraz. It is the Koros or Cyrus [Kuros] of the ancients<sup>330</sup>, written Kar by Ebn

sembled Madeira, but with a higher flavour. It is said to have the quality of keeping its qualities in hot climates like that wine.

<sup>326</sup> Kerim Khan, in Niebuhr's time, in the year one thousand seven hundred and sixty-five. Francklin describes Kerim Khan as a benefactor to Persia, and in a better light than Niebuhr; but Francklin was at Shiraz in the year one thousand seven hundred and eighty-seven, after the death of Kerim, and the

tyranny of his successors made him regretted.

<sup>327</sup> Κέρτιοι καὶ Μάραοι λεγόμενοι. Strabo, p. 729. Ελυμαῖοι καὶ Παρτακαννοί. P. 732.

<sup>328</sup> Strabo has sometimes confounded Susiana with Persis, as p. 727; but he distinguishes; p. 728.

<sup>329</sup> The Araxes of Strabo, p. 729; but he errs strangely about the course of it. See d'Anville's Memoir.

<sup>330</sup> Strabo, p. 729.

Haukal, and Cqer-ab [the river Ker or Kur] by Al Edrissi. Arrian, in his third book, has unfortunately confounded Persépolis<sup>331</sup> with Pasagardæ<sup>332</sup>; but the former was the residence of the Persian monarchs, and the latter apparently their place of burial. It is near sixty miles distant from Persépolis, in the tract called Koilè-Persis [Persis between the mountains] by Strabo, which ought to produce other torrents and another<sup>333</sup> lake<sup>334</sup> for their reception, by the nature of the country; and such we find there are in the account of this province by Ebn Haukal. This town is supposed still to exist under the name of Phasa, or Phasa-gerd, which Golius interprets the city of the north-east, because it is cooled by the refreshing gales from that quarter, which is implied in Phasa.

SUSIS, OR SUSIANA.

To delineate the province and rivers of Susiana is a task of no<sup>335</sup> ordinary difficulty; for though we have ample materials, both historical and geographical, they are all either ancient or oriental: no modern or European traveller has ventured to explore this dangerous tract, and the actual state of the interior is

<sup>331</sup> The archives, and a great part of the treasure, were kept at Persépolis. Strabo, p. 730; and so it appears, from Alexander's haste to reach it before the treasury should be plundered, or conveyed away. Arr. lib. iii.

<sup>332</sup> The error is natural, for Parsa-gardæ is Peræ-polis, literally translated. The Persépolis fixed at Estakar is determined by Alexander's march.

<sup>333</sup> The lake Backtegian is in the Koureh or district of Istakhar; there is another in the

Koureh of Shapour, and a third also in the same district. Ebn Haukal, p. 99.

<sup>334</sup> There is something like this in d'Anville's maps, *Asie premiere partie*, &c. Strabo mentions an Agradátus, or Agradátas, here, which was changed into Cyrus, p. 729. This is noted by d'Anville, and refuted.

<sup>335</sup> See the wild geography of Ammianus Marcellinus respecting this province. Lib. xxiii. 456.

as little known as the centre of Arabia. This creates difficulties which the following discussion is unable to remove, but our knowledge of the coast has been much enlarged since the publication of Mr. d'Anville's Memoir; and if for this reason I am enabled to correct his mistakes, and to explain intricacies for which he had no clue, I shall be thought less adventurous in combating Cellarius and Salmasius, who have enveloped the question in erudition, and neglected modern authority altogether.

The fact is, however, that the ancient geographers cannot be understood or reconciled, without reference to the actual state of the country; for they have applied different names to the same rivers, and the same name to different rivers; and the same writer has varied his appellations as often as he has copied different authorities. Of this I shall produce proof in regard to Arrian himself; and though I might have reduced what is necessary for elucidating the passage of Nearchus into a less compass, I trust that the length of the following discussion will be acceptable to such as think the reconciliation of classical geography an object of importance.

After the whole business was completed, I was informed by Major Rennell that he had been long engaged in disentangling the same intricacies, and treading the same ground; a cause of no small apprehension to me, if his conclusions should appear upon publication to differ from mine; of no small gratification, if they should be found to coincide. I shall at least have a generous adversary to encounter; and as I have no predilection for any system, I can, upon better information, retract as freely as I have asserted. Truth alone ought to be the object of research;

and those, who are not so fortunate as to attain it, ought to subscribe<sup>336</sup> to those who do.

Susiana is sometimes regarded as a district of Persis, and sometimes enumerated as a distinct province. We can hardly trace a time in which it had an independent sovereign of its own, unless it be in the mythology of the Greeks<sup>337</sup>; and nature seems to have connected it with Persis, by a variety of local circumstances, as much as by vicinity. It is separated on the north from Media by a range of mountains which extend also into Persis, of which the general appellation is *Louristan*; possessed in all ages by independent tribes, which were confined within their own limits, when the government was strong; and, when it was weak, returned with increased avidity to a life of rapine. So far as can be collected from the transactions of Alexander, the *Uxii*<sup>338</sup> and *Paratakêni* were upon the southern face of these mountains; the *Cossêi* and *Elymaîtæ*<sup>339</sup> on the north; the *Uxii* lie on the left, between *Susa* and the *A'rosis*; the *Paratakêni*, on a part where the mountains have a much greater breadth, on the north of Persis. This range, where it rises on the west, approachès, but does not touch<sup>340</sup>, the *Tigris*. In this interval,

<sup>336</sup> I subscribe to the sentiment of the modest and ingenuous Niebuhr :

Il n'y a point de description de voyage sans défaut, n'y aucun voyageur exempt de tout préjugé, ainsi le parti le plus sage c'est de ne pas défendre ses opinions avec opiniâtreté. Niebuhr, tom. i. p. 85. *Arabie* edit. Amsterdam.

<sup>337</sup> In their accounts, Memnon, son of Tithonus, was the founder of *Susa*.

<sup>338</sup> *Uxii*, *Asiactæ*. *Parataceni*, *Bactlari*. *Kossæi*, *Kissii*, *Coss's*.

<sup>339</sup> *Elymiôtæ*, the *Elam* of Scripture. It

is the temple of Jupiter Belus in *Elymaïe*, which Antiochus the Great is said to have plundered, and where he lost his life. A temple of Bel or Baal it might be, but Jupiter is the addition of the Greeks. The superstition of Baal, or the worship of the Sun, was prevalent in all these countries; and Baal-bee is literally *Heliópolis*, or rather the temple of Baal.

<sup>340</sup> Otter, coming down from Bagdat, marks them at a distance, where they first begin to shew themselves between *Amara* and *Khorna*,

Mr. d'Anville brings down the Gunedhi, which is the Gyndes of Heródotus so much humiliated by Cyrus, and which he conducts into the Tigris just above its junction with the Euphrates at Khorna. The rivers or canals of Susiana are connected with this stream, and in this sense it forms the boundary of the province on the Tigris; but as soon as the mountains rise, they run in one uninterrupted chain, covering not only Susiana and Persis, but extending much farther towards the east. This chain sends down all the numerous streams which water the fertile plains below; and there is an assertion common to Strabo, Al-Edrissi, Ebn Haukal, and Cheref-eddin, that all these rivers join the Eulêus, and communicate, by means of canals, with the Tigris. The account of these canals is confirmed by every Oriental authority we possess; and the policy of the government in all ages, while there was a government, appears to have paid as much attention to this object, and to agriculture, as Egypt itself. The fact admits of proof under the later dynasties, and the journal of Nearchus will furnish some evidence of its antiquity. It is not unreasonable to suppose, that this communication was extended to the A'rosis also, and by that stream to Persis; and if this were true, the intercourse between Persis and Mesopotámia, by an inland course, was complete.

## THE AROSIS.

THE A'rosis, which is the Oroátis of Strabo, Pliny, and Ptolemy, and which Cellarius<sup>34</sup> supposes to be properly the Arois,

<sup>34</sup> Cellarius is undoubtedly accurate, for Diodôrus calls it Araxes in a passage not understood by Salmasius, p. 1184.

Ares<sup>343</sup>, or Araxis<sup>343</sup>, is the boundary between Persis and Susiana; its modern names are almost as numerous. T'Ab, or the river, is the title it takes by way of pre-eminence among the Persians, for it is the largest river<sup>344</sup> of the province, a circumstance peculiarly noticed by Nearchus. It rises between the borders of Pars and Spahaun, according to Ebn Haukal, and flows down to Arjan<sup>345</sup> [Argoun or Arrhegian], whence it is called Ab-Argoun; and as it approaches the sea, Nehr 'Tab; the name it takes in our modern charts is Endian<sup>346</sup>, from a town upon its banks, a few miles distant from the sea.

This river is formed from a variety of sources, which spring out of the mountains of Louristan; and as the chain is of greater breadth in that part of its range, the river seems to be large in proportion. Alexander and Timour, in their march from Susa to Persis, both inclined to the mountains, in order to attack the Uxii, or Asciacs, who lie in that direction; and they both passed the sources of this stream, at a considerable distance<sup>347</sup> from the sea. In the march of 'Timour, there are several sources on the west of this river, which the commentator upon Cheref-eddin carries into the Eulêus<sup>348</sup>. Alexander<sup>349</sup> and

<sup>343</sup> Who shall give us the etymology of rivers? Bruce found a Skelti, and an Arvon, or Avon, in Abyssinia. Aar is a river in France, Arno in Italy. What language shall be found that shall furnish names common to Abyssinia, Media, Italy, France, England, and Scotland? I have an obscure reason for thinking that Ar, or Atar, usually denotes confluence.

<sup>344</sup> Araxis is a name common to a variety of rivers in different provinces of the East. The Armenian Aras, which falls into the Cyrus, and so into the Caspian Sea, is the most celebrated. This is the *pontem indignatus Araxis*.

<sup>345</sup> ὅσοι ἐς τὸν ἕξω πόντον ἐμβαλλοῦσι is the expression of Arrian, not very accurate.

<sup>346</sup> Arjan or Argan is one merileh, or thirty miles from the sea. Ebn Haukal, p. 105.

<sup>347</sup> Niebuhr writes it Hindian.

<sup>348</sup> Timour at Kerdistan, 70 miles from the mouth, according to d'Anville. See Cheref-eddin, vol. ii. p. 185.

<sup>349</sup> Cheref-eddin calls the river of Susa, Ab-Zal.

<sup>350</sup> After the defeat of Ariobarzânes.

See Q. Curt. lib. v. 5. Totâ nocte cum equitibus itineris tanto spatio fatigatis, ad Araxem primâ luce pervenit.

Timour both proceeded towards this river, to attack a fortress in the mountains, on the northern frontier of Persis, and which is supposed to be Calaa-sefid<sup>350</sup> by Cheref-eddin: but they are different posts<sup>351</sup>. And while Alexander marched through the mountains on the north, he detached Parmenio, with the gross of the army, by the ordinary<sup>352</sup> road to Persis. This is the road which continues to this day, if there be any road, which Al-Edrissi describes as cutting the A'rosis at Ragian, about thirty miles from its mouth, and where, he says, there is a bridge called Baccar, at a bow-shot's<sup>353</sup> distance from the town. He gives a variety of routes through Persis, all verging to this point; and, from the size of the stream, here probably was the first place where it would admit of a bridge.

The mountains which give birth to the A'rosis do not approach the sea, nearer than the neighbourhood of Rhegian; but seem to leave a low country on the coast, corresponding with the Kermesir on the gulph. This must have always left Susiana open to the Persians, and have been the means of keeping it in dependence, as was its constant state; but on the north the range sweeps round till it unites with that chain which forms the back ground of the Kermesir, and this chain, according to d'Anville, no river passes. The sources, therefore, which Alexander and Timour found in their march to the East, all

<sup>350</sup> Kalaa-sefid, White Castle, is at present the remains of a prodigious fortress on the top of a mountain, which has been levelled and cut down for that purpose. It is a place mentioned in the earliest Persian poems, and the Iskander Naumeh, or history of Alexander, relates most heroic actions performed by Alexander at the capture of it. Mr. H. Jones. But Kalaa-sefid cannot be the fortress defended by

Ariobarzanes, as his fortress was previous to passing the river A'rosis.

<sup>351</sup> Diodorus Curtius and Arrian all make the fort defended by Ariobarzanes to lie on the west side of the river.

<sup>352</sup> *κατὰ τὴν ἀμεινότεν τὴν ἐς Πέρσας φέρουσαν.*  
Arr. lib. iii. p. 130.

<sup>353</sup> Nuh. Geog. p. 126.



contribute to form, not the A'rosis, but the Bend-Emir, or *Noble River*, which passes on in the vicinity of Shiraz and Persépolis till it is lost in the lake Baghteghian, or exhausted in adorning and fertilising the beautiful country of Koilé-Persis<sup>354</sup>. We have now the A'rosis distinct, according to d'Anville, and I have found nothing in ancient or modern history to contradict his system; nor do I think that any future discovery will invalidate it, farther than perhaps to find a different issue for some of his minuter sources. This A'rosis is the eastern boundary of Susiana, where Nearchus is now anchored; and deferring the intermediate streams for the present, I shall proceed to consider the Euphrates and the Tigris united in the Schat-el-Arab, which forms the *western limit*.

SCHAT-EL-ARAB, OR MOUTH OF THE EUPHRATES AND  
TIGRIS UNITED.

THE Euphrates<sup>355</sup> and the Tigris both preserve to this day, among the natives, the same appellation assigned to them by Moses<sup>356</sup> in the book of Genesis, for he styles the one Hu-

<sup>354</sup> Cœlé-Persis, like Cœlé-Syria, Persis between the mountains.

<sup>355</sup> Εὐφράτης δὲ καὶ Τίγρης ἐπὶ τὴν Ἐρυθρὰν ἁπλᾶσι θάλασσαν, καλεῖται δὲ ὁ μὲν Εὐφράτης ΦΟΡΑ. σημαίνει δὲ ἥτοι σκιδασμὸν ἢ ἄθος. Τίγρης δὲ ΔΙΓΛΑΘ, ἡ δὲ φράζεται τὸ μετὰ σιότητος ὄξύ. Josephus, lib. i. c. 1. Antiq.

The Euphrates and the Tigris fall into the sea of E'rythras: the Euphrates is called Phora, which signifies, by one derivation, Dispersion, and by another, a Flower; but the Tigris is named Diglath, an appellation which indicates *sharp* and *narrow*.

Phora, however, in some MSS. is written

Phorath like Diglath, and is in reality the modern name Phoráth, Phōrát, Forát, F'rat. It has two derivations from the Hebrew, פָּר, or פָּרַץ, Phar or Phartz, to *spread*, which indicates (σκιδασμὸν or) *dispersion*, or פָּרַה, Pharah, to *produce fruit or flowers*, (ἄθος).

Diglath is derived, in this form, from קָלַל, Khalal, to *go swift* (ὄξύ μετὰ σιότητος). This is a coarse etymology, for ὄξύ is not swift (but ὠκύ), and we have nothing to represent μετὰ σιότητος. Perhaps Josephus and his countrymen were as bad etymologists as the Greeks.

<sup>356</sup> Gen. ii. 14. Pherat is used frequently in Scripture with the pronoun, as פֶּרַת הַנָּהָר.

Pherát, or Pherát, and the other Hid-Dekhel<sup>357</sup>, two names which are still preserved in the country with no greater variation than Ph'rat and Deghel<sup>358</sup>, or Dejel. These two rivers, like the Ganges and Burrhampooter, rise at no great distance from each other in Armenia; and, after separating to embrace the great tract called Mesopotamia, unite again, like those two streams, at Gorno or Khorna, about an hundred and thirty miles distant from the Gulph of Persia. D'Anville has strangely curtailed<sup>359</sup> this distance; for in his map of Asia he makes it less than seventy miles, and in his two latter maps has extended it to something less than an hundred: but M'Cluer can hardly be mis-

Hu-Pherát, *The Pherát*, or *that Pherát*, by way of pre-eminence; and is derived by the commentators from פָּרָה, Pharah, to *produce fruit*, on account of its *fertilizing* the country by canals, &c. from פָּר, Phar, and פָּרַץ, Phartz, to *burst* or *spread*, because it *overflows* its banks, and from פָּרַס פָּרַס פָּרַר, to *divide*, because it *separates* or *bounds* the desert. The Greeks, as Hoffman justly says, *more suo*, derive Euphrates from ὑπερβάτης.

<sup>357</sup> Hid-Dekhel is written חִידְקֵל Kid-Dekhel, and by the Samaritan MS. חִידְקֵל Hid-Dekhel, as we are informed, from חָר to *dart forth*, חֲרָר, *loud*, or from חָר, to *penetrate*; with the addition of קָלָל, which implies *swift* motion; a sense agreeable to the opinion of the Greeks, who interpret the Tigris, sometimes *swift*, and sometimes from the Persick, Teir, an *arrow*. It is remarkable that the pronoun *Hu* should preserve itself in the Greek *Eu-Phrates*, which it certainly does, unless *Eu* is from Ab, Av, or Au, *water* or *river*; and that none of the authorities should suffer us to write Hi-Dekhel, so as to search for a primitive of *Dekhel* rather than *Khalal*. [See Bochart. Phaleg. 119. Dikla,

*urbs palmarum*, Chald. Dent. xxxiv. 3. Quære annon pari ratione Mesopotamia regio *Palmarum*? Dekhel is assuredly the Deghel of the Arabs, the Diglath of Josephus, and Diglito of Pliny; and from Degel (according to Bochart) the Greeks made Deger, Teger, and Tigris.] An idea occurred to my own mind, that as Hu expressed the *male*, and Hi the *female*, (הוא ille, היא illa,) there might

have been some allusion to the confluence, or the marriage of the rivers, or that Deghel was marked by the feminine pronoun, as Pherát is by the masculine; but I am forced to abandon this suggestion by authority. that I ought not to dispute.

<sup>358</sup> If Dekhel had been written with a *g* in Hebrew, like Degel, Arab. or Diglath, Josephus. דָּגַל, Dagal, signifies to *dazzle* or *glitter*, &c. an idea not inconsistent with a swift and agitated stream; but all the authorities tend to קָלָל, Khalal.

<sup>359</sup> From the mouth to Bassora 100 miles,  
to Khorna 75

175  
Ives, p. 227.

taken in making it seventy<sup>360</sup> up to Basra only ; for he navigated this channel more than once, and has given directions for the course up to that city. Khorna signifies an horn<sup>361</sup> in Arabic, evidently marking its connexion with the Greek, Latin, and English ; and here the river divides *upwards* in that form. From Khorna, down to the division of the stream again which embraces the Delta, is the part properly called the Shat-el-Arab, or river of the Arabs. From that division downwards, the western, or direct channel, still navigated by European vessels, is called Cossisa-Bony, or Bouna, in opposition, possibly, to the farthest channel eastward, called Deree-Bouna<sup>362</sup>, from Deree, an island, at its mouth ; and in treating of this western stream, I shall be obliged, for the sake of perspicuity, to call the whole channel from Khorna to the sea by the name of Shat-el-Arab. The junction formed at Khorna was certainly known to Ptolemy, and, I am persuaded, was the grand confluence in all ages ; but Pliny and Arrian as certainly give two mouths, one to the Tigris and another to the Euphrates ; the latter, I shall hereafter shew, was the Khore-Abdillah with which d'Anville seems little acquainted ; and hence he has been led into a variety of errors, which disfigure his learned Memoir upon the Mouths of these two Rivers. I shall, however, first

<sup>360</sup> He makes it ninety from point to point, that is by the windings, p. 33. Ives, p. 227, makes it 100.

<sup>361</sup> The zeta of Dil-kharnim, or Alexander, from his figure with the *borne* of Hammon, as is supposed by some, is well known in Asia ; and in this compound we find the plural of Kharna, or Khorna.

The Greeks and Latins described rivers by a bull, as some imagine from the roar of waters ; but Achelôus lost an horn by Hercules,

that is, as mythology informs us, had one of his sources intercepted, and other rivers are styled Tauri *formes*.

<sup>362</sup> Bouna, or Bourn, I suspect to signify a *stream*. Bournabaachi is the *head of the stream*, in Chevalier's account of the Troas. Whence is the connexion with our English-Bourne ? which signifies a *stream*, or a *boundary*. *Bourne*, a *stream* and a *boundary*, are from the French *borner*.

consider the great Delta, and afterwards return to treat of these difficulties.

The Delta of Susiana is much more properly than the Delta of Egypt inclosed and divided by seven <sup>363</sup> streams <sup>364</sup>, which are called, 1. The Cossisa-Bony <sup>365</sup>; 2. The <sup>366</sup> Bamishere <sup>367</sup>; 3. The Caroon, or Karûn; 4. The Selege; 5. The Mohilla; 6. The Gaban; and, 7. The Deree-Bouna. These are names which I obtain from M'Cluer and a very curious <sup>368</sup> chart of Mr. Dalrymple's, and are apparently the titles by which these channels are known to the Karack pilots. This chart explains the journal of Nearchus as perfectly as if it had been composed by a person on board his fleet. Three of these streams, after cutting the Delta, pass through a shoal which is called the Meidan <sup>369</sup> Ala, the great flat, evidently from its plain and even surface, extending out twelve, and in some places seventeen miles, from the coast of the Delta. The Meidân is rarely <sup>370</sup> or never dry, even at the time of ebb; but the channels which pass between it have a considerable depth of water; these are styled Khores, that is,

<sup>363</sup> Small channels are sometimes cut for purposes of communication or agriculture; but they vary with the fluctuation of the government. These are natural channels.

<sup>364</sup> Ten streams according to Pliny, lib. vi. c. 27.

<sup>365</sup> Khôre Hâlte. Niebuhr.

<sup>366</sup> Niebuhr writes this Bäckmeschir, which is done by adding k to the guttural in Bah-miser, the natural consequence of a deep sound in the throat; so Hân, Khân, Cawn, Shushan, Husan, Khusan, or Khoosan, shewing the relation between the ancient Susa and modern Khoosistan.

<sup>367</sup> The Backmeschir of Niebuhr, as next in order to his Khore Sable, ought to be the

Karun: but of this, from Mr. Jones's intelligence, I have reason to doubt.

<sup>368</sup> Communicated to Mr. Dalrymple by Captain Howe of the India service, brother to Lord Howe.

<sup>369</sup> Meidan means any plain surface; and Ala means extensive, great, good, &c.: nor is it ever called Aly Meidan, but Meidan-e-Alâ. The Persian scholar will at once perceive the difference, and the absurdity of Aly Meidan. M'Cluer, who calls it Ali Meidan, was no Persian, nor indeed any other scholar, but an admirable navigator. Mr. H. Jones.

<sup>370</sup> Only dry in part, that is where the water is less than two fathoms. Mr. Jones.

limits or divisions of the sand ; and thus Khore Gufgah is the issue of the Bamishere channel, Khore Musah of the Karûn, and Khore Wastah of the Selege. The general name of the land they separate on the Delta is called Gaban, of which I am not able to give the limits ; but the tract between the Cossisa-Bony and the Bamishere<sup>371</sup> is particularly called Meuan and Mucan<sup>372</sup>; corresponding with the Mesène of Xiphilinus, with Khore Musah, or Moosa, and with Ptolemy's river Mosêus<sup>373</sup>, which none of the modern geographers know where to place. At the head of this Mesène, near the Haffar Cut, was placed the Spasini Charax, or fort of Spásinus. Mr. Dalrymple's chart has a fort there at present called Old Haffar Fort, with another on the opposite shore ; both existing when Thevenot went by this course up to Basra, and both intended by Spásinus<sup>374</sup>, and all

<sup>371</sup> I suspect, but have no means to prove it, that Bahh-Mishere is related to Bahh-Mesène, which extended perhaps to the Karua.

<sup>372</sup> See M'Cluer, p. 30. with Dalrymple's query, Mucan or Musan? and see p. 32. note. Marcian writes *Mayáiu* for Ptolemy's *Μωσάιυ*, see p. 17.; so that the difference between Mucan and Musan is ancient as well as modern. Salmasius reads *Μεγάιυ*.

<sup>373</sup> See Cellarius in Susiana, and d'Anville's Dissertation. To make Khore Musah exactly correspond with the Mosêus of Ptolemy, it must be the issue of the Karûn, as it is in M'Cluer's chart. The Orientals write Mousa, pronounced Moosa, for Moses ; the Greeks wrote *Μωυςης*, Moouses, and in this form we easily find the Mosêus of Ptolemy. Musah, or Musa, is pronounced, as we should utter Moosa, and not Musa, or Muse. An Arab would doubtless attribute Moosa to Moses, and the name of the prophet was sufficiently current in the East to fix his title here, even previous to the age of Ptolemy, but it is

a name common to many places, as well as one specified by Niebuhr in Yemen. It will be proved hereafter, that Ptolemy reckoned the Dorack channel as the mouth of the Eulêus ; and then as he mentions but three [the Tigris, Mosêus, and Eulêus], the Mosêus would regularly be the Karûn, and so answer individually to Khore Moosa ; a proof of this is, that his Oroátis, or A'rosis, succeeds next to his Eulêus.

<sup>374</sup> Pásinus, Pásines, &c. &c. the son of Sogdonucus. Plin. lib. vi. cap. 31. It is the name of an Arab before the time of Pliny, like a Sheik Soleiman of the present day.

It is not necessary to fix on this identical spot for the fort ; by Pliny's account it ought to be nearer the sea. But he says, according to Juba, it is 50 miles from the sea ; but by the account of the Roman merchants and Arabian ambassadors, it was 120 miles. It had formerly, he says, been close to the sea, or only ten stadia distant. Lib. vi. c. 31.

his successors in power, either to guard the channel or to exact a tribute. I mention this place for two reasons ; first, because Alexander is said to be the original occupier of this site ; and, secondly, because Cellarius is at a loss, and d'Anville is not without his doubts ; but before I enter into this question, I must digest the course and order of the channels. The Shat-el-Arab would naturally have but two, which are the two western ones, the Cossisa-Bony and the Bamishere. The Bamishere was a channel frequently navigated by the country vessels till within these few years ; when it was obstructed by an Arab Sheik, with a view of drowning the country on the Cossisa-Bony ; but operated contrary to his expectation, in clearing that channel, and removing the sands at its mouth. This attempt was made by the Chaub Sheik, and was known to Mr. Jones when resident at Basra. It is recorded by Niebuhr as happening to the Khore Sable<sup>375</sup>, which is perhaps his name for the Bamishere, or his mistake of the Khore.

The five western channels seem to derive their origin from the Eulêus, or river of Susa ; this stream divides in the interior of the province ; at what point is difficult to determine : but I can discover clearly, that on approaching the Delta the western branch takes its title from Karûn, a town ten or twelve miles above the Delta, as the eastern channel does from Deurak, Dorak, or Dereë, another inland town, that extends the influence of its name down to the coast. The western branch, upon its approach to the Delta, subdivides into four ; the first carries its name of Karûn through the Delta to the sea. This was the channel navigated by the country vessels in Thevenot's

<sup>375</sup> Sable seems an European term, and French.

time, from Bender-Regh to Basra; and the three others are the Selege, the Mohilla, and the Gaban. The Dorack stream of the Eulêus, after separating inland, comes to the east, and, as it touches the Delta, joins on one side with the Gaban river, and with another arm, which we may call a sixth channel, encircles an island named Deree, from this Deree, or Dorack stream; and there is a tract within land styled Dorac-Stan, or Dorghestan, from the same origin. Now it is remarkable that Ptolemy notices a Dêra inland, which Cellarius knows not how to fix; wherever it is, it gives a title to this river, as Karûn does to the western branch; it communicates its name also to Deree, the island, where we are to look for the Kata-Derbis of Arrian, which d'Anville has mistaken; and in Dorghestan I find the Margastan of Arrian, which he calls an island at Kata-Derbis. The Dorack <sup>276</sup> river is no very considerable stream, and according to Mr. Dalrymple's chart, dry at low water; it was probably of more importance formerly, either by natural or artificial means, when the navigation of the province was the object of government. Between the mouth of this channel and the Khore Wastah there is a shoal, corresponding with the Meidan Ala, called Carabah, or broken <sup>277</sup> ground, because the soundings vary in an instant. The native pilots say, there is a town sunk under water here, and that the lead is sometimes dropt upon the tops of houses, and sometimes into the streets, which makes the difference so immediate. This is a circumstance connected with the passage of Nearchus, either through or over this shoal, as will be noticed in its proper place. And again to the eastward

<sup>276</sup> The Dorac stream was injured by the Chaub Shaik, when he was besieged at Dorac, in the year 1767 (I believe), by the conjoined forces of the Turks and English. Mr. H. Jones.

I have since had reason to doubt whether the Dorack stream comes from the Eulêus.

<sup>277</sup> Mr. Jones.

of the Dorack, there is another shoal named Barcan<sup>378</sup>, extending to the mouth of the A'rosis. The extent of all these shoals naturally obliges vessels to be careful how they approach the coast, and the ground of the Delta being proportionably low and level, is rarely visible except by the rushes which grow upon it. When Thevenot went up the Karûn, he compares the country to Holland; and a Holland it would be, with industry and a good government; for a soil, which is the accumulation of slime, ought naturally to be fertile. In his time, there were only a few mean villages dispersed here and there, with a small quantity of cattle and some plantations of the date tree, which is the staple of the country. Within these few years, it was possessed<sup>379</sup> by the Arab tribe of Kaab<sup>380</sup>, under a Sheik called Soleiman; he seems to have bettered the cultivation, and, by the possession of a piratical fleet, to have rendered himself formidable to the Turkish government of Basra on the one hand, and to the Vakeel of Shiraz on the other<sup>381</sup>. He was afterwards involved in a quarrel with the English, on account of two considerable vessels which he had taken, but at last fell by the hands of his own people<sup>382</sup>. Such is the nature, and such are the inhabitants of the Delta, and such are the branches of the Tigris and the Eulêus which form it. There may have been a time when these two rivers flowed into the sea without farther connexion than their vicinity; but there is now a canal which joins them, called the Haffar, which comes out of the Shat-el-Arab, about eight-and-twenty miles below Basra, and runs east-

<sup>378</sup> The Sinus Arenosus of Ptolemy, or that part of it nearest Derce.

<sup>379</sup> As it is now, though Shaik Soleiman has long been dead. Mr. H. Jones.

<sup>380</sup> Kiaab of Otter, and Kiab, Chaub of

Mr. H. Jones. Sheik Soleiman is a representative of Sheik Spasinus or Athambilus, who were both Arabs.

<sup>381</sup> Niebuhr.

<sup>382</sup> Mr. Jones.



ward till it touches the Eulêus, or Karûn, just at the point where it approaches the Delta. This canal is older than the time of Alexander, for Nearchus mentions that part of the fleet passed through it into the Tigris, when Alexander came down the Eulêus to the sea. I shall treat more of this hereafter; but I must remark at present, that inland navigation is the characteristic of the province; and that neither Cellarius or d'Anville has sufficiently attended to this object. Cellarius, who allows that the Mosêus of Ptolemy must be between the Tigris and Eulêus<sup>363</sup>, cannot comprehend how this canal of Haffar could pass between these two rivers, without exhausting itself into the Mosêus; but he might now see, by a glance at Mr. Dalrymple's chart, that we have<sup>364</sup> a Tigris<sup>365</sup> and Eulêus<sup>366</sup>, with the Mosêus<sup>367</sup> between them, and the Haffar canal passing at the head of the Delta from the Tigris to the Eulêus.

Mr. d'Anville<sup>368</sup> has been led into a greater error; for he places the Mesênè west of the Schat-el-Arab, instead of east. And what induced him to adopt this system is by no means apparent, as he knew well that the ancient geographers place the fort of Spásinus in Mesênè, and he has himself placed this fort eastward of the Shat-el-Arab, though he places Mesênè on the west. Upon considering this opinion, I am induced to think that Mr. d'Anville is misled by Ptolemy's Sinus Mesánius;

<sup>363</sup> Et quia Mosæus intervenit Tigrim et Eulæum, ostium quoque ejus, si in mari est, ut tradit Ptolemæus, propius utique ad Tigrim accedit, quam Eulæi. Quòd vero fossa illa ex Tigri in Eulæum haud longè supra ostia, uti ex Arriani verbis apparet, ducta fuit, dubites quòd fossa per aliud flumen, Mosæum puta, transversa duci potuerit, ut non efflueret per flumen illud: nisi supra fossam Mosæus vel

Tigri vel Eulæo se adfuderit. Cellar. lib. iii. c. 19. Susiana, p. 483.

<sup>364</sup> Ptolemy notices only three of these mouths, which correspond.

<sup>365</sup> Cossisa-Bony.

<sup>366</sup> Either the Gaban channel, or the Dorack is the Eulæus of Ptolemy.

<sup>367</sup> Karûn.

<sup>368</sup> Memoir, p. 180.

and if that can be accounted for, the whole coast may be adjusted, and all the ancient geographers made consistent with each other.

D'Anville's Mesênè is the Gezirat Khader of Thevenot, the Dauasir of Niebuhr, lying between the Shat-el-Arab and the Khore Abdillah; but Ptolemy's Sinus Mesánius is certainly not the coast of this tract; for his two mouths of the Tigris are manifestly the Shat-el-Arab and the Khore Abdillah, as appears by his placing Terêdon between them; and his Sinus Mesánius as manifestly commences not between them, but at the mouth of the Khore, and extends down the western side of the gulph. On looking down the gulph in this direction, I find the bay of Grane<sup>389</sup>, with three islands at the entrance; one of these nearest the shore is called Muchan or Muçan; this, I apprehend, gives name to the Sinus Mesánius; and when I look into Ptolemy for the termination of this on the north, I find the longitude assigned to it is 79°, specifically the same as his western mouth of the Tigris, that is, the Khore Abdillah.

Thus Mercator interprets the text, and thus the longitudes and latitudes appear in Ptolemy:

		Long.		Lat.
P. 144. Sinus Mesanius <sup>390</sup> ,	-	79° 0'	—	30° 10'
P. 154. Sinus Mesanites,	-	79° 0'	—	30° 10'

<sup>389</sup> There is a Graan noticed by Ptolemy, but in long. 82. which brings it to the middle of Susiana; it can have no relation to this Grane.

<sup>390</sup> The numbers in the Greek text vary from those of the Latin, as Bishop Horsley has very justly noticed; and from his observation I have

learnt to pay more attention to the original. But their fluctuation in this instance does not affect the argument; for the longitude and latitude of either text equally prove that the Khore Abdillah is the western mouth of the Tigris in Ptolemy's estimation, by his placing Terêdon between that Khore and the Shat-el-

	Long.	Lat.
P. 149. Ostium Tigris Occidentale,	79° 0' —	30° 34'
P. 145. Teredon, - -	80° 0' —	31° 10'
P. 149. Ostium Tigris Orientale,	80° 30' —	31° 0'
P. 149. Vallum Pasini, -	81° 0' —	31° 0'
P. 149. Mosêus, - -	82° 0' —	30° 40'

The error of these longitudes is foreign to the inquiry ; but their relation and congruity prove that the termination of the Sinus Mesánius is at the western mouth of the Tigris ; that Terédon is between the western and eastern mouth, consequently that the Khore Abdilla is Ptolemy's western, the Shat-el-Arab his eastern Tigris ; and that the fort of Pásinus is between the Schat-el-Arab and the Mosêus or Karûn.

This bay, consequently, cannot be on the coast of d'Anville's Mesênè, for it is south-west of the Khore instead of north-east ; and if we could obtain the interpretation of Muçan<sup>m</sup>, we should probably find the reason why it is attributed both to this island at the bay of Grane, and to that tract which is inclosed between the Shat-el-Arab and the Karûn, which is the Mosêus of Ptolemy, and which encloses the Mesênè of Xiphilinus, Josephus, and other historians.

With the Khore Abdillah d'Anville was not properly acquainted ; he supposes it the ancient mouth of the Euphrates ; and such it is according to Pliny and Arrian, but no ancient author of estimation except Ptolemy ever made it a mouth of

Arab ; and that his Sinus Mesánius is to the west of both, as the Vallum Pasini and the Mosêus are to the east.

<sup>m</sup> Une bande de terre, isolée par un canal.

D'Anv. Geog. Anc. tom. ii. p. 201. If this be true, it accounts for both, and for the Mesênè of Pliny. De Messene Apameensi vid.

Salm. p. 699.

the Tigris. This is the first source of his mistake, and he now makes this a mouth of the Tigris, which in another part he labours to prove the Euphrates. The Mesênè<sup>393</sup> of Pliny is so confused, that I should be thankful for a construction of the passage. Mr. d'Anville says, he carries it above Seleucia; if so, it is the Mesênè of Apamêa with which we have no concern. But let us consider next the Mesênè of Xiphilinus. These are his words: "After Trajan<sup>394</sup> had taken Ctêsiphon, he determined to "navigate<sup>395</sup> the Red Sea, that is, the Gulph of Persia. . . . "There is an island there formed by the Tigris, called Messána, "under the government of Athâmbilus; this Trajan reduced "without difficulty, but was himself brought into great hazard "from the season of the year, the violence of the stream, and "the inundation of the tide. The inhabitants of the fortress of "Tospâsinus relieved him, however, by their friendly reception "of him into the place. This fortress is under<sup>396</sup> the govern-

<sup>393</sup> Tigris . . . lustratis montibus Gordyæorum circa Apamiam Mesenes oppidum, citra Seleuciam, Babyloniam, cxxv. M. pass. divisus in alveos duos, altero Meridiem ac Seleuciam petit, Mesenem perfundens: altero ad Septentrionem flexus ejusdem gentis tergo Cauchas secat. Ubi remeavere aquæ Pasi-tigris appellatur. Postea recipit ex Media Choaspem.

In the course of four lines here is a desultory step from the Curd mountains to the mouth; but d'Anville, by the help of Apamêa, fixes this Mesênè above Bagdat. See Geog. Anc. tom. ii. p. 200. Cellarius, vol. ii. p. 462. See Ammian. Marcel. lib. xxiv. p. 399; where Mesênè evidently means a tract between the two rivers. By *ubi remeavere aquæ*, Pliny seems to mean as high as the tide flows, in which he is not correct, for the tide flows above Khorna.

<sup>394</sup> Postquam Ctêsiphontem cepit [Trajanus] statuit mare rubrum trajicere . . . appellant Messanam quoque insulam. Tigris in qua Athambilus regnabat, nullo labore cepit atque iis in locis propter vim hyemis et rapidum Tigrim æstumque maris in magnum periculum venit. Qui vallum Tospasini habitabant (nam ita ab incolis appellabatur eratque in ditione Athambili) Trajanum amice receperunt. Xiphilin. Traj. p. 55. Ed. Basil.

Tospasini is, I conclude, a corruption from the Greek τὸ Σπασίνου χῶμα; for, we learn, that the fort was erected upon a mound of raised earth, to give it security both from an enemy and inundation; for the whole of the Delta is a level. See Cellarius, vol. ii. 448; who reads τὸ Τοσπασίνου contrary to my supposition.

<sup>395</sup> Trajicere.

<sup>396</sup> Rather in the territory of Athambilus, in ditione.

"ment of Athámbilus." D'Anville places the fort of Spasinus where I do, but the district of Mesênè on the other<sup>396</sup> side of the Shat-el-Arab. This passage proves that the fort is in Mesênè, and that the Mesênè is between the mouths of the Tigris; that is, between the Tigris<sup>397</sup> and the Mosêus. It is possible I may be mistaken in assigning a position to the fort. But there is no error in replacing the Mesênè<sup>398</sup> east of the Shat-el-Arab instead of west. The just estimation of Mr. d'Anville's name has led me into this discussion. I have now done with the Tigris and the Delta, and proceed to the Euphrates.

#### KHORE ABDILLAH, SUPPOSED MOUTH OF THE EUPHRATES.

THE Euphrates appears always to have formed its principal junction with the Tigris at Gorno, or Khorna; but as, from the most early ages, it sent off canals on both sides, for the purposes of agriculture or communication, so it has happened that one of these which passed by Old Basra, and fell into the Khore Abdillah, has been mistaken by Pliny and Arrian for the real mouth. Arrian is so persuaded of this, that when Nearchus anchors at Diridôtis, or Terédon, in the Khore Abdillah, he calls it anchoring in the Euphrates: and he says in another part

<sup>396</sup> See the map to his Memoir, and that of the Tigris and Euphrates.

<sup>397</sup> Charax habitator in colle manufacto inter confluentes, dextra Tigris læva Eulæus. Plin. lib. vi. c. 27.

<sup>398</sup> See Josephus, lib. i. Antiq. c. 7. Stephan. Σπασίνου χάραξ πόλις ἐν τῇ μέσῃ τῇ Τίγριτος Μεσσην, &c. all adduced by Cellarius, vol. ii. 488. but he is not contented to be right. He adds, Aberrat autem in eo quod in mediâ Mesenâ illâ, quam Tigridis ostia constituunt, posuit.

I build much upon the modern name of Muçan, and the Khore Moosa, and perhaps it ought always to have been written Mosena, or Moosena, from Muçan, which the Greeks made Mesênè, because they had a Mesênè of their own. It is their practice in a thousand instances. I have, however, found reason to suppose that Mesen signifies an island, or perhaps more properly land surrounded by the arms of a river, possibly from the Greek μέση, but I doubt it. See note 391.

of his work, that this mouth, or khore, is almost choked in consequence of the derivations which drain the stream above. The Khore Abdillah, upon the English charts, appears larger than any khore of the Tigris; and this circumstance, with which d'Anville was unacquainted, would have confirmed him, if he had known it, in his system, that it is the original mouth of the Euphrates. It is remarkable that Ptolemy gives no mouth to the Euphrates; the issue of the Tigris, which he terms Eastern, that is, the Shat-el-Arab, is in <sup>399</sup> latitude  $30^{\circ} 34'$ , and his junction of the Euphrates with the Tigris is in latitude  $34^{\circ} 20'$ , making a difference of  $3^{\circ} 46'$ ; evidently much too large; but as evidently pointing out the confluence <sup>400</sup> inland, as Khorna does at this day. Strabo doubtless thought the Khore Abdillah to be the mouth of the Euphrates, by placing Terêdon <sup>401</sup> on its bank; but Solinus <sup>402</sup> asserts, that the Tigris carries the Euphrates into the Persian Gulph, and Pliny, who joins it to the Pasitigris, (by which he means the Shat-el-Arab,) evidently alludes to the original mouth at the Khore Abdillah, which the Orchoëni <sup>403</sup> had obstructed; and so long had it been obstructed in his time, that he no longer places Terêdon on the Euphrates, but says it lies below the confluence of the two rivers <sup>404</sup>.

Let us now advert to the Khore Abdillah itself, which will afford a clue to unravel all these difficulties. The ancient kings of Assyria, Chaldæa, and Babylon understood the value of inland canals, as well as the Egyptians, Indians, Chinese, or the modern commercial states of Europe. In Egypt, and on the

<sup>399</sup> Ptol. p. 149.

<sup>400</sup> So Mercator understands it, as appears by his distorted map.

<sup>401</sup> Strabo, p. 80.

<sup>402</sup> P. 66. Sol. Tigris Euphratem defert in

sinum Persicum.

<sup>403</sup> Lib. vi. c. 27. Euphratem præclusere Orchoeni, nec nisi Pasitigri defertur in mare.

<sup>404</sup> C. 28.

side of the Euphrátes, all that was gained out of the desert was just so much added to the empire; and thus, as we find a cut parallel to the Nile for near four hundred miles, so Niebuhr is of opinion, that there was a canal running westward of the Euphrátes from Het<sup>466</sup> more than six days' journey above Babylon<sup>467</sup>, till it fell into the sea at the Khore Abdillah. This is an extent of more than five hundred miles; and, however great, is not superior to the magnificent designs of the age<sup>468</sup> to which it is attributed. It is countenanced, likewise, by the accounts which we have in Heródotus and Diodôrus, of the reservoirs formed above Babylon, to withdraw or feed the stream at pleasure; by the existence of the two lakes below Babylon, near Mesched Hossein and Mesched Ali<sup>469</sup>, the Pallácopas of Arrian; and by a variety of cuts, some of which remain to this day, and still fertilize the desert; the remains of towns<sup>470</sup> also noticed by almost every traveller in the caravans between Basra and Aleppo, all contribute to the probability of the fact. They flourished while the canals flowed, they have perished by the devastation of the Arabs, and the neglect or inability of the

<sup>466</sup> Het is on the wind of the river, near Kunaxa, where the ten thousand fought Artaxerxes, according to d'Anville.

<sup>467</sup> The language of Al-Edrissi is very strong in confirmation of this opinion. After bringing down the Euphrates to Het and Eubar, he adds,

Reliqua vero pars Eufratis fluens e Rahaba a tergo deserti in varia dividitur brachia quorum unum pergit ad Tsarsar aliud ad Alcatser [al Khader], aliud etiam ad Sura, quartum denique ad Kufam [juxta Pallacopam], et omnia ista brachia varios in lacus sese immergunt. p. 197.

If we can interpret this as a canal com-

mencing at Rahaba, that place is not far from Thapsacus, two hundred and fifty miles higher up than Niebuhr carries his canal.

<sup>468</sup> That age of the Anakim, or Giants, as Bryant styles them, produced the Pyramids, the Lake Méris, the Obelisks, the walls of Thebes, Babylon, Tiryns, and Orchómenus, with other monuments of magnificence in various parts of the world. Were these the effect of numbers or mechanic powers?

<sup>469</sup> Bahr-nedsjef is the name of this lake. Niebuhr, vol. ii. 184. Amst. edit.

<sup>470</sup> See Niebuhr, *ibid.* El Khader, ten or twelve leagues from Mesched Ali.

government to maintain the supply of waters. If such a canal as this existed, it communicated with the parent stream at various points; and such a communication as this, d'Anville has pointed out at Naher Saleh, about five-and-thirty miles above Khorna; he brings this down parallel to the Shat-el-Arab, gives it another communication<sup>43</sup> with that channel, near Basra, and afterwards conducts it into the Persian Gulph, in the direction of the Khore Abdillah; this is the stream he concludes to be the ancient course of the Euphrates, and such it was in the estimation of Pliny, Strabo, and Arrian. D'Anville, with the assistance of Texeira, finds this channel now dry, and styles it the <sup>44</sup>Choabedeh<sup>45</sup>; and this dry channel certainly exists, for Mr. Jones, when resident at Basra, has ridden along it many miles.

Khore Abdillah takes its modern title from a name of no little importance in Mahomedan mythology, for Abdillah is the son of Annas<sup>46</sup>, who was porter to the prophet himself; his tomb is in the neighbourhood of Zobeir, and this Khore is a Crisséan Gulph<sup>47</sup> for such votaries as come to pay their devotions to his relicks. At Zobeir, or Ghibel<sup>48</sup> Senâm, in its neighbourhood, d'Anville places Orchoè, because Pliny says, the Orchoëni diverted the stream of the Euphrates; but Pliny

<sup>43</sup> By means of a cut called Oboleh, or Obolla, sufficiently noticed in Oriental geography.

<sup>44</sup> Choabedeh, commonly Chubdeh, is the flat, low, marshy district, lying between Khore Abdollah and the Sheet-il-Arab; and I am of opinion that the canal now dry, which passed by the town of Zebeer, branched from the Euphrates at Nahr Saleh. Mr. H. Jones.

<sup>45</sup> Which he derives from Bedeh, a tent of the Bedouins.

<sup>46</sup> Niebuhr, vol. ii. p. 182.

<sup>47</sup> It brings them within fifteen miles.

<sup>48</sup> Niebuhr writes Djabbel, which signifies a mountain. Thus Ætna still preserves its Saracen name Ghibello. It is, therefore, a solecism in reality to say Monte Ghibello, but this solecism pervades all countries; the unknown language gives a name, which signifies mountain, and the language in use adds another mountain to it.



only adds their name to the same circumstance mentioned by Arrian, in the neighbourhood of Pallacopas, or Bahr-Nedsjef, and every ancient testimony whatsoever, except Ptolemy, places Orchoë in the same situation<sup>46</sup>. Ptolemy says, it is near the gulph; but this assertion seems so indefinite to Mercator, that he has carried it up to the lakes; and there, the latitude<sup>47</sup> assigned to it authorises him to place it: but d'Anville is not content with bringing Orchoë here, unless he annihilates Old Basra. Basra<sup>48</sup>, Bozra, and Bosara, is a name applicable to any town in the desert, it signifies rough or stony ground; and thus we have a Bosara in Ptolemy near Maskat, and a Bozra familiar in Scripture, denoting an Arabian town in the neighbourhood of Judæa, taken by the Maccabees. Such a Basra, Niebuhr not only supposes in the site of Zobeir, ten or twelve miles west of the present Basra, but confirms it by the common belief and tradition of the country; he adds, what amounts to proof, that Hassan, Zobeir<sup>49</sup>, and Tellâ, are buried here, and their tombs visited, who are all mentioned in Oriental writers as interred at Basra. Zobeir<sup>50</sup> gives his name to the present town<sup>51</sup>, and his

<sup>46</sup> See Salmasius, p. 703. Cellarius, Hon-  
dus, &c. &c.

<sup>47</sup> Ptolemy, 32° 40', p. 145.

<sup>48</sup> Gol. ad Alfrag. p. 120. *Terra crassa  
et lapidosa*. But see *בוצרת*, under *בצר*.  
Botsrath desertum a Batzar clausit, quia clau-  
duntur aquæ.

Bozra is mentioned as early as the age of Abraham. Gen. xxxvi. 33. Is. lxiii. 1. &c. &c. From hence Bazar for an emporium, and urbs munita, quia *circumclauditur*; to which the Bursa of Carthage is allied.

<sup>49</sup> Niebuhr, vol. ii. p. 181.

<sup>50</sup> Zobeir is again inhabited, which is caused by persecution arising from a new Mahometan *deïam* growing up at El Ared in Lachsa.

The Sannites persecuted take refuge at Zobeir. Nieb. ii. p. 211.

See Capper's Route. He arrives at Zobeir, then just depopulated afresh by a Persian tyrant, governor of Basra. Capper, p. 225.

These deists are now known in Europe by the name of Wechabites (from Abd-ul-Wahab their leader), and have since plundered Mecca, Medina, and Kerbelâ.

<sup>51</sup> Tavernier confounds Zobeir, or Old Basra, with Terêdon, and mentions a canal to it in his time, which is either the Obolch of d'Anville, or the canal of New Basra continued. The same canal is mentioned by Texeira.

tomb is still frequented. This, then, is the ancient city by which the channel passed, which is still called Dsjarri Zâade, and Hassé Zâade, by the natives; and this is the channel which, entering the head of the Khore Abdillah, was the mouth of the Euphrates, in the opinion of Strabo, Arrian, and Pliny. Where it left the Euphrates above, whether at Nahar Saleh, as d'Anville supposes, or whether it was a continuation of the grand canal Niebuhr describes, is a problem still to be resolved; I am myself persuaded that it was a canal, and not the natural course of the river; for though Nahar<sup>422</sup> does signify a river, its sense in this country is usually restrained to works of art; thus the great canal is distinguished, which joined the Euphrates and Tigris in Mesopotamia, called Nah'r Malcha, the Royal Canal; and a great number of others which branch out of the Euphrates on both sides. To what degree this stream was choked in the age of Pliny or Arrian, is not easy to ascertain; it might only have ceased to be navigable; for that it continued to convey water to Old Basra, as late as the beginning of the Mahomedan era, is evident; as that place was still inhabited, and still a city. When the supply failed, the desert was no longer habitable; and another Basra rose on the banks of the Shat-el-Arab, the foundation of this new city is attributed to Omar<sup>423</sup>, the

<sup>422</sup> I say *usually* restrained; because Nahar is applied to the Euphrates itself, in Joshua, i. 4. and Gen. xv. 18.

"Nahr is never made use of to signify a river, *i. e.* a natural river, either in Arabic or Persian, but implies a work of art, from the canal of Zobeir to the ditches by which the fields are watered at Bassora." Mr. H. Jones. In modern usage, I conclude Mr. Jones is perfectly correct.

<sup>423</sup> Mr. H. Jones is of opinion that Old

Basra was on the eastern side of the Shat-el-Arab, and supposes that he saw the ruins of that city so situated, as he went up that river; but if such ruins there are, they ought to be nearly on the site of the fort of Spâsinus, the city of Athâmbilus. I should not venture to controvert his opinion, if I had not consulted the authorities to which he refers. These are the original historians who record the battle of the Camel, and the defeat of Ayesha, with her attendants Zobeir, &c. From them it is

second khalif in the fourteenth <sup>44</sup> year of the Mahometan era <sup>45</sup>.

From the respect due to Mr. d'Anville, this subject has been treated at large, but the real object is to illustrate the Khore Abdillah, which is intimately connected with the course of Nearchus, and the two lakes above, which concern the voyage of Alexander on the Euphrates, down to Pallacopas; and I must now request the reader to take a view of that tongue of land between the Khore Abdillah, and the Shat-el-Arab, called the Daûasir, the lower part of which I must sink under water, to find the lake Nearchus sailed through in his return to the Pasitigris.

Nearchus, according to the journal, anchored at Diridôtis in the mouth of the Euphrates, the <sup>46</sup> Terêdon <sup>47</sup> of other authors; that is, at the entrance of the Khore Abdillah, which they consider as the Euphrates. From hence he returned back, across a lake towards the Pasitigris. The length of this lake is thirty-seven miles, according to d'Anville; but this will be considered hereafter. I now observe that the Daûasir must be curtailed, or at least carried back so far as to give the waters the appearance of a lake rather than a river; and for this defalcation we shall find abundant evidence in the account of later writers. These proofs

evident that Ali was marching from the west, and had not crossed any river, much less such an one as the Shat-el-Arab. The battle was fought near Old Basra, for Ayesha was conveyed a prisoner thither the same night; and that Old Basra was to the westward of the Shat-el-Arab is manifest from the tomb of Zobeir, which is at Gibbel Senam, still visited and revered by the Mahomedans, and nearly in the position of Old Basra. See Abil-feda, Reiske, Leipsick ed. 1754, p. 86.

<sup>44</sup> There are two courses of reckoning; by one it would be the fourteenth, by the other the nineteenth. Abilfeda Reiske, p. 68.

<sup>45</sup> Gol. ad Alf. p. 120.

<sup>46</sup> Built by Nebuchadnezzar, according to Abydenus. Scal. Emend. Temp. Frag. p. 13.

<sup>47</sup> Ευφράτης

Ἀπὸ τὴν ἡλίου μίσην βασιλεὺς περὶ τὴν  
Περσίδος εἰς ἄλδς ὁδὸν ἀπὸ τῆς ἰταί ἄχρην  
Υδατὶς προχέουσι Τερηδόνης ἰγγυὺς ὁδὸν.

Dionys. Per. 980.

I reserve till Nearchus arrives at the spot ; but I must now examine the Tigris and the streams of Susiana inland.

## TIGRIS AND PASITIGRIS INLAND.

THE name given to the Tigris by Oriental writers is *Dejela*<sup>428</sup>, which Bochart informs us they would write almost indifferently *Degel*, or *Deger*: hence sprung the Greek *Teger* or *Tigris*<sup>429</sup>, by their usual assimilation of sound to sense ; and under this title we must consider it, in opposition to the *Pasitigris*, which is a stream perfectly distinct. It is true that Pliny is mistaken on this point, for he supposes that the Tigris in the lower part of its course receives *all* the waters of Susiana, and from thence acquires the name of *Pasi-Tigris* ; but this is interpreting an Oriental appellation by a Greek etymology. This error was common to other authors, and is expressly corrected by Strabo<sup>430</sup> ; but it has misled so great a geographer as M. d'Anville, who brings Nearchus up the *Shat-el-Arab*, and thence by the *Haffar* canal to *Susa*, without considering that Nearchus himself, who returned by this passage from *Susa*, states the distinction in precise terms.

The Tigris, in fact, though it communicates with *all* the rivers of Susiana, cannot be said properly to receive them, for the communications are artificial. Of these there are three : the lowest is the *Haffar*<sup>431</sup> canal, about twenty-seven miles below

<sup>428</sup> *Didsjilé*. Niebuhr.

<sup>429</sup> They knew that *Tigris*, or its root *Teir*, signified an arrow ; but as they had a *Lykus* or *wolf* higher up, they were not displeased at finding a *tiger* to keep him company.

<sup>430</sup> Strabo, p. 728.

<sup>431</sup> The *Haffar* river is nothing more than a branch of the *Karooon*, which empties itself into the *Shat-el-Arab*, instead of the sea. Mr. H. Jones.

Basra, which is expressly called a cut<sup>423</sup> by Nearchus, and considered as such by all the Oriental writers. The second is named the Suab<sup>424</sup> or Soweib river, which comes into the Tigris from the east, a little above Basra; it is connected with the rivers of Susiana by means of a canal called the Mesercan<sup>425</sup>, and this is the usual channel of intercourse between Basra and Haviza<sup>426</sup>, or Ahwaz: its issue into the Tigris is, according to Ebn Haukal, nearly opposite to Ableh<sup>427</sup>, and Ableh is the Aphlè of Pliny, perhaps also the Ampè<sup>428</sup> of Heródotus. The third communication joins the Tigris above Khorna; it is connected with the streams of Susiana by a cut from the Mesercan, and at this issue the river of Khorremabad, called the Gunedhi by d'Anville, the Gyndes of Heródotus is supposed to join the Tigris; and by means of the Tigris the intercourse is open up to Vasisit or Wasith, and thence to Bagdat.

The river of Khorremabad, indeed, has a very different course assigned to it by Major Rennell, for he supposes it to be

<sup>423</sup> Ἄς δ' ἄλλαι νῆες κατὰ τὸν Εὐλαῖον ἔρ' ἐπὶ τῷ διώρυκα ἢ ΤΕΤΜΗΤΑΙ ἐκ τῆς Τίγριτος εἰς τὸν Εὐλαῖον, ταύτην δεχομένησαν εἰς τὸν Τίγριτα. Arrian, lib. vii. p. 281.

The ships were conveyed by a canal, which was cut from the Tigris to the Eulæus.

<sup>424</sup> There is a topographical table of Basra and its environs, in Melch. Thevenot, drawn up by a native for the Christians of St. John, (as they are called,) which, though without proportion, still preserves the relative position of the Suab, Haffar, and all the other localities here specified.

<sup>425</sup> The Mesercan is noticed by Ebn Haukal and Al Edrissi. Ebn Haukal says, it is sometimes dry or exhausted by irrigation. Al Edrissi writes, *Et verò cum aqua in incremento est, quod evenit in initio mensis, naves illic transeunt, cum autem in decremento,*

*transire nequaquam possunt*, p. 123; that is, at spring tides the water here is deep enough for navigation. He adds, *Grandibus sulcatur navigiis*.

<sup>426</sup> Ahonaz, Ahwaz, Haviza is more noticed in modern Oriental writers than Tostar. It has a communication with the Shat-el-Arab, in the little district of Soweib. Mr. H. Jones.

<sup>427</sup> M. d'Anville supposes Aphlè to be Haffar, but Ableh with a native pronunciation is Avleh, for Cashin is Casvin; and Avleh cannot be written in Greek letters but as Aphlè, unless we assume the modern beta, which would be precisely Αβλη, Αβλè. Ebn Haukal expressly mentions the three passages by water from Hiss Modhi to Basra, Ableh, and Vasisit.

<sup>428</sup> Lib. vi. p. 447.

the Khoaspes or Eulêus. He places Susa on a small stream which joins it, and carries it down to the Delta, instead of conducting it into the Tigris above Khorna; but in consequence of this arrangement, he is necessitated to convert the Diala into the Gyndès of Heródotus. This system has great difficulties, for the Gyndes<sup>439</sup> was crossed by Cyrus in his march to Babylon; but if he came from Ecbátana, it was not necessary to cross the Diala<sup>439</sup>; and if from Susa, it was an hundred miles out of his way.

Heródotus has three rivers distinguished by the name of Tigris: the main stream is that which passes by Opis<sup>440</sup>, and is properly the Armenian river; he has then two<sup>441</sup> others, which come from the country of the Matiéni, which is the northern part of Media, the Al Gebal of the Arabs, the Khoestan<sup>442</sup> of

<sup>439</sup> The reason assigned for dividing the Gyndes into 360 channels by Cyrus is not satisfactory. Cyrus was probably at the head of five or six hundred thousand men, and he spent a whole campaign in subduing this river. (Herod. i. 89.) Neither the river of Khorremabad or the Diala seem to require any such expence of time or labour. Bridges of boats were in usage throughout Susiána and Mesopotámia, and this usage is at least as ancient as the time of Xerxes, which makes it highly probable that it could not be unknown to Cyrus. Herod. i. 89.

<sup>440</sup> There is much disquisition on this subject in Larcher and other commentators, and an expression of Heródotus which seems to favour Major Rennell's arrangement, for the text says of the Gyndes, αἱ μὲν πηγαὶ ἐν Ματινοῖσι εἰσιν, ὅτι δὲ διὰ Δαρδανίου. Now Δαρδανίου is read Δαρνίου in some MSS.; and Otter (tom. i. p. 155.) says, the Diala comes from Dernè and Dertenk. Still the march of Cyrus does not correspond with the Diala, and Major

Rennell brings his Choaspes, that is, the river of Khorremabad, from Dainawar, now Dainawar approaches as near to Δαρδανίου as Dernè.

<sup>441</sup> I now understand (by the assistance of a learned friend) what I did not comprehend when the former edition was published, in which I supposed the Opis of Heródotus to be placed near the gulph of Persia. (See Dis. on Opis.) I am now convinced that Heródotus meant to distinguish the Armenian Tigris by the title of that Tigris which passes by Opis. Compare this with the expression of Nearchus. παραπλίσσι λίμνη ἐς ἣν ὁ Τίγρις ἐσθάλλει ποταμός· ὅς ῥ' ἐστὶν ἰξ, Ἀρμενίων παρὰ πόλιν Νίνοι παλαι ποτὶ μεγάλην καὶ ὑδαίμονα τὴν μίσην ἐν αὐτῇ τε καὶ τῇ Εὐφράτῃ ποταμῷ ποιεῖ. Arrian. Gronov. p. 357. Herod. v. 397. and i. 89.

<sup>442</sup> According to the reading of Pauw adopted by Wesseling in loco, οἱ δὲ ὑστέρων.

<sup>443</sup> Al Gebal and Khoestan are equivalent; both signify a mountainous region.

the Persians: these we may suppose to be the Zab and the Diala; and the Gyndes is a fourth river which joins the three united. Major Rennell supposes the second and third streams to be the great and little Zab, and thus makes the Diala, as the fourth, become the Gyndes. In this it is to be supposed that the great inducement he has to assume the river of Khorremabad for the Choaspes or Eulêus is, that it comes out of Media, for that is a character attributed to the Choaspes by several of the ancients. This, however, will be matter of future consideration.

Having now obtained a general idea of the Tigris, it remains to prove that the Pasitigris is a distinct river; and this can only be effected by taking a view of the peculiarities of Susiána, which are singular in the extreme. To enable us to execute this task, we have a variety of assistance from ancient and Oriental geographers, from modern navigators, and from the marches of Alexander, Antigonus, and Timour; but the failure is in regard to modern travellers, who might have connected this various information: for in this country, whether from the dangerous disposition of the natives, or from the failure of curiosity, or the little prospect of emolument, we have had no Bruce to penetrate into the interior; neither have we a right to expect that men should jeopardy their lives for our instruction and amusement, without a probability of return. From Mr. Jones, however, I have learned that there is still a regular communication between Basra and Tostar; that a fleet of small vessels proceeds monthly, by means of the Karoon river, up to that city; that it is still considered as the principal, if not the capital, emporium of the province; and that, however dangerous it might be for Christians, Mahomedan traders still find a considerable profit in the commerce.

In earlier times, when Susa was the residence of the Persian monarchs, and the depository of their treasures, when the richness of the soil and the facility of communication were equally lucrative to the merchant, the wealth attracted into this little province, and the treasures accumulated in its capital, will hardly appear exaggeration to the mind of such as are conversant in these inquiries. The extent of it, from the mountains which encompass it on the north to the gulph of Persia on the south, can hardly be estimated at much more than an hundred miles; and the extreme length of it, from Basra on the Tigris to Rhagian on the A'rosis, is probably short of two hundred: but the whole of this extent is intersected and watered by rivers which issue from the various bosoms of the mountains on the north, all of which are united to the main stream which passes by Tostar; and this stream is again divided into various channels, on its approach to the Delta, till it issues into the gulph of Persia by its seven mouths. This is a similar circumstance, upon a smaller scale, to that which takes place in the Nile, the Indus, the Ganges, and the Danube; but several of these rivers in Susiána are deep and navigable before their junction, because the mountains which produce them are lofty, and because the country through which they flow from the mountains is, with very little exception, one universal level to the sea.

The one <sup>443</sup> stream into which they are united is at this day called the Karoon, from a town of that name not far from the

<sup>443</sup> "Ἄλλοι δὲ φασὶ τὰς διὰ Σέσου ποταμὸς ἢς ὅν ῥιθμὸν τὸ τῷ Τήγριος συμπέπτω, καὶ τὰς μεταξὺ διώρυχας τῷ Εὐφράτῳ, &c. Strabo, p. 729. which is that of the Tigris, [Pasitigris of the MSS.] and the intermediate canals of the Euphrates. Hence it is that the Tigris is called the Pasitigris. Strabo corrects this derivation in another passage. Polyclétus says,

Others say that the rivers that pass by Susa [or through Susiána] fall into one stream,



head of the Delta; and though at present it carries the same name in a direct line through the Delta to the sea, this was not the case in the esteem of the ancient or Oriental geographers; for both considered the eastern channel as the real issue of the main stream, which the Greeks called the Eulêus<sup>44</sup>, and the Persians the Ab-Zal<sup>45</sup>. This channel issues at<sup>46</sup> Hisn-Modhi<sup>47</sup>, which, according to M'Cluer, is short of thirty miles from the A'rosis or Tab, the river that divides the province of Persis from Susiána. From this point at Hisn-Modi the communication was open by water to the Tigris, that is, there were channels, either natural or artificial, through a tract from 180 to 200 miles in extent, and on this inland navigation the pre-eminence of the province was established.

It is now that we are to fix upon one of those streams which joined the Eulêus from the mountains, to which we may assign the name of the Pasitigris; and if an oriental etymology be admissible, the appellation may be derived from Pasa, Phasa, Pheza, or Beza, which Golius informs us signifies eastern or

that the Eulêus, the Choaspes, and the Tigris fall into a lake, and thence into the sea, p. 728.

<sup>44</sup> Ptolemy's mouth of the Eulêus is the channel nearest to the A'rosis, agreeing precisely with the Oriental geographers.

<sup>45</sup> Ab Zal, fleuve dont une branche passe a Tostar elle passe par tout le Courestan [Khoozistân or Susiana], & se discharge dans le sein Persique a Hisn Medhi. Petis de la Croix. Hist. de Timour, tom. ii. p. 168.

<sup>46</sup> The land of Khuzistan [Susiana] is level; it has many running streams, the chief of which is the river of Shuster.—Shuster is situated on an eminence.—The river comes [passes] from Asker Mokrem to Ahwaz, and

falls into the river Sedreh, and goes on to Hisn Modhi on the sea-side. Ebn Haukal, p. 74.

Another river is Nehr al-Mushirkan, on which, at Asker Mokrem, is a great bridge; by this river one may go from Asker Mokrem to Ahwaz, a distance of eight farsang. Ebn Haukal, *ibid.* N. B. Nehr-al-Mushirkan implies the canal of Mushirkan. This canal is said to have been made by Adud-ud-Deulet. Otter, ii. p. 55. What his age is I know not, but I imagine the communication to be ancient. Abul-feda dit que la riviere de Tostar se jette dans le Golfe Persique aupres de Hisn Medhi. Otter, *ibid.*

<sup>47</sup> Either the Kataderbis or Margastana of Arrian.

north-eastern; and the eastern Tigris this may be considered, in reference either to the grand stream of the Tigris, or to Susa. That it was east of Susa is proved by the bridge upon it, which Alexander passed upon his return from Persis, and as the point where the fleet under Nearchus joined the Macedonian army; and east of Susa it appears, by the retreat of Eúmenes and Peucestas, and the march<sup>448</sup> of Antígonus to attack them. It is from the same march manifestly the *second* river east from the Eulêus, for Antígonus moved from Susa to the Kópratás. The Kópratás is mentioned as a navigable stream four hundred feet wide, and said to join the Pasitígris before its confluence with the Eulêus. Over this stream he advanced a small body of his forces, which for want of embarkations he was unable to support. Eúmenes profited by this error: he hastened instantly from the Pasitígris to attack the forces that were separated; and upon their defeat Antígonus was compelled to retreat over the mountains into Media. We have, therefore, ascertained a Pasitígris as the second river east from the Eulêus, and this is confirmed by the march of Alexander, when he was originally proceeding from Susa to Persis, and when after passing the Pasitígris he moved to the north against the Uxii. The Uxii are the Asciacks of Oriental geography: their position is ascertained both by the ancients and moderns; they are on the mountains between the river of Ram Hormuz and the Tab, that is, between the Pasitígris and the A'rosis. This river of Ram Hormuz is the second<sup>449</sup> stream east of the Ab-Zal, in the

<sup>448</sup> Diodórus, lib. xix. p. 331. Ed. Wesel. There is much confusion in Diodórus, arising from his calling this river several times the Tigris; but in p. 331. he expressly writes τὸν

Πάσιτυρον, which if Wesselling had not restored from some of the best MSS. might still have disgraced the text.

<sup>449</sup> Timour in reality passed a small stream

march<sup>440</sup> of Timour; it is the second east of the Eulêus, in the march of Antigonos; it is navigable, according to Diodôrus<sup>441</sup>, near half a mile wide, and from nine to twelve feet deep; it has a course little short of ninety miles<sup>442</sup> from its source; and it is provided with a bridge of boats, which Eûmenes came over to attack Antigonos, which Alexander crossed on his return from Persis to Susa, and at which Nearchus concluded his expedition. This bridge continued to exist, according to the latest account of Oriental geography; it is at Ram Hormuz, and lies on the direct road from Rhagian on the A'rosis to Tostar.

The whole of this arrangement, however, must be set aside, if Tostar be not identified with Susa. In this there would be no difficulty, if Major Rennell<sup>443</sup> had not assumed Sus on the Kierkè for Susa on the Eulêus. The Kierkè is one of those mountain streams which falls into the river of Khorremabad; and as this excellent geographer has converted this stream into the Eulêus, much deference is due to his judgment: it is with great hesitation that I venture to controvert any assumption of his, but I shall state my reasons for dissent, and leave the determination to the judgment of the reader.

The whole of his system rests upon the issue of the Khor-

at a little distance from Tostar; but it is an artificial cut, and did not exist in the age of Antigonos.

<sup>440</sup> Timour employed three days in moving from Tostar to Ram-Hormuz; and according to Q. Curtius, Rex [Alexander] *quartis* castris pervenit ad fluvium, Pasitigrim incolæ vocant, oritur in montibus Uxiorum. Alexander in four days from Susa reached the Pasitigris: a nearer correspondence can hardly be required. Diodôrus, lib. xix. c. 17. makes it only one day's march from Susa to the Pasitigris; but

the progress of Antigonos, in the following chapter, almost to a certainty proves the contrary.

<sup>441</sup> Diodôrus, lib. xix. c. 17. From three to four stadia broad, as deep as the height of an elephant, with a course of 700 stadia.

<sup>442</sup> Q. Curtius mentions that its course among the mountains is broken and violent for fifty stadia, or six miles; and thence six hundred stadia, or almost eighty miles, navigable to the sea.

<sup>443</sup> Geography of Herodotus, p. 203.

remabad river, which he brings through the level country of the province, till it falls into the Karoon, and encircling the Delta empties itself into the gulph at Hisn Modhi. But if Oriental authority has any weight, this arrangement cannot be admitted; for Petis de la Croix informs us that the Khorremabad river is carried into the Tigris, and the Basra Map of M. Thevenot affords positive evidence in his favour. This is the authority which d'Anville has followed, and a very attentive consideration of the province, with every assistance I could obtain, convinces me that this is the fact.

Otter mentions Kierkè as the river of Sus: he says that it comes from the mountains of Ervend<sup>44</sup>, or Loristan; that it is joined by the Dinever<sup>45</sup>, the Guoulguiou, the Silakhor, and the Khorremabad; and that all five<sup>46</sup> are carried by one stream into the Shat-el-Arab. On this ground, I do not hesitate to advance that all these western rivers have no other communication with the eastern but by means of the canals, by the Mesercan, or branches derived from it.

. Let us next consider the inducements which Major Rennell has to conclude that Sus is Susa.

1. The similarity of name.
2. The legend of the prophet Daniel, whose coffin was found at Sus.
3. The desire of adopting a river that has its origin in Media.

1. To the first I answer that the similarity of name is a corroborative circumstance, when we are sure of our position; but

<sup>44</sup> D'ervend, perhaps *Δαρδανίον*. Otter, ii. p. 56.

<sup>45</sup> Perhaps Dainewar.

<sup>46</sup> This map was framed by a native of Basra.

till the position is ascertained, it is only a presumptive proof, and often fallacious, as may be collected from the many deceptions of this sort which have misled so great a geographer as d'Anville. But if Tostar recedes from a resemblance of Susa, Shuster approaches it; and Shuster it is constantly written in Ebn Haukal, and many other Oriental geographers. Shuster again approaches still nearer to Shushan, which is its title in Scripture; and Shusha differs not from Susa but by the insertion of a dot in the letter Shin.

That Daniel was at Shushan is indubitable, and that Shushan was upon the river Eulêus is equally evident; for the prophet says he was at Shushan, Gnal-Aub-al-Ulai<sup>437</sup>, on the river Ulai; and Aub-al-Ulai would at this day express the same thing in the language of the country. That this Shushan was not Sus, but Shuster, has every apparent evidence in its favour; for if Sus is a very ancient city, as the Oriental writers allow, Shuster is still more ancient. It was in their opinion built immediately after the flood by Houchenk<sup>438</sup> and the mythology of the Greeks makes it as ancient; for in their estimation it was built by Tithônus, son of Memnon. Now it is sufficiently acknowledged that, in the idea of the Greeks, whatever is called Memnonian, Cyclopean, or Ogygian, is something antecedent to all history; and in this view the testimony of Greeks and Persians is the same. Susiána, the name of the province, still approaches nearer to Shushan; and Khoosistan, its modern appellation, derived from the mountains which sur-

<sup>437</sup> Chap. viii. 2. עַל-אֹבֶל-אֵלַי. And that the Ulai was divided into more streams than one, seems apparent from the expression, verse the 16th, בֵּין אֵלַי, which,

according to Parkhurst, signifies *between*, in the intervals or parts between the two branches of the Ulai.

<sup>438</sup> Otter, tom. ii. p. 50. Sir W. Jones, in Nadir Shah, p. 39.

round it, is evidently connected with the Kissii<sup>409</sup>, Kussii, and Kossêi of the Greeks.

A strong reason for placing this Susa at Shuster occurs in Ebn Haukal; for he informs us<sup>410</sup>, that there is not in all Khuzistan any mountain or sand except at Shuster, Jondi-Shapour, and Aidej<sup>411</sup>: but if the treasures of the empire were to be guarded in the capital, it must be in a fortress; and the idea of a fortress and a mountain is so nearly allied, that we cannot suppose this circumstance would have been neglected, where so great a mass of wealth was to be secured. That Shuster is placed on a hill we know, for the waters of the Ab Zal are raised by a mound or dyke at Dez Phoul, to supply the city; and that the citadel of Susa was strongly fortified we learn from the surrender of it to Alexander, and from the defence of it by Xenóphilus against Antígonus<sup>412</sup>, who was obliged to decline a siege from the necessity of pursuing the enemy. All these circumstances are perfectly consistent, if a mountain is requisite for a defensible citadel; and it is hardly to be supposed that Sus, where

<sup>409</sup> Οἱ τε τὸ Σόσσην ἢ δ' Ἐκβάτανον  
καὶ τὸ παλαιὸν Κίσσιον ἔργον  
Προλεπόντις ἔσαν.

*Æschylus Pers. sub initio.*

"Those who came from Susa, or Ecbátana, or the ancient fortress of the Kissii;" so that the most ancient agrees with the most modern appellation, for Khuzistan is the country of the Khussii, and Kusii written in Greek letters is Kysii, or Kissii. This province is often called Kourestan by Oriental writers, for *z* and *r* are only distinguished by a diacritical point often omitted. In what manner Khuzistan differs from Khouestan [Media], when both express mountains, I have not learnt.

<sup>410</sup> P. 75. Καὶ ὅ γι γὰρ, καὶ δὲ Σπασυροί, καὶ τὰ μνημεῖα ἐνταῦθα ἢ τοῖς Πέρσαις, ὡς ἐν τόποις ΕΡΤΜΝΟΤΕΡΟΙΣ. Strabo, lib. xv. p. 728.

<sup>411</sup> Aidej is written Arjeh by Al Edrissi; and though it may be thought fanciful, still the mention of *sand* here may suggest a conjecture that Arjeh-reck (like Bunder-reck) may signify Arjeh in the *sands*. Now Arjeh-reck approaches so nearly to the Ardericca of Heródotus, where he says Xerxes placed the prisoners taken in Eubéa, that I cannot help suspecting a relation. Heródotus has another Ardericca in Babylonia, lib. i. p. 87. but this is in Kissia, 210 stadia from Susa. Lib. vi. p. 493. Bochart prefers Erecka.

<sup>412</sup> Diodorus, lib. xix. p. 330.

there are no such natural means of protection, could have been selected by the monarchs of Persia for the security of their treasures. Modern fortifications may be preferable on a plain, where there are no commanding grounds in the neighbourhood; but the instances are very few in ancient history, and more particularly in the East, where any situation <sup>43</sup> would have been thought defensible, unless it were on a height; and if this citadel was on a mountain, it certainly was not at Sus.

2. To the legendary tradition of the prophet Daniel's coffin found at this city, little more respect is due than to the legends of the church of Rome. The Mahomedan traditions suppose that Abraham was cast into a furnace at Babel by Nimrod <sup>44</sup>, that Istachar was built by Solomon, and that Job erected a pillar at Constantinople. Till we can give credit to these, little attention is due to the legend in the present instance.

3. To the third argument, that Susa ought to be placed on a river that has its source in Media <sup>45</sup>, it is impossible to reply,

<sup>43</sup> See Strabo, p. 728. who says, it was fortified with brick like Babylon. This is rational, for there is no stone in the province. He adds, that, according to Polyclétus, it was 25 miles round, and without walls. This is not inconsistent with a fortified citadel. Antigonos entered the city, but Xenóphilus refused to deliver up the citadel where the treasures were.

<sup>44</sup> See Ebn Haukal, p. 70.

<sup>45</sup> Otter says, that the river of Tostar (that is, the Ab-Zal or Eulêus) has a course of thirty leagues from Kiouhi-Zerd, the mountains of Louristan, before it reaches that capital; and this is Oriental authority for giving a remote source to the Eulêus, agreeably to the idea of the Greek geographers.

Χωρίς μὲν Κορος ἐστὶ μέγας, χωρίς δὲ Χόασπις  
ἔλαυν Ἰνδὸν ὕδωρ, παρὰ τὴν μέσην χθόνα Σάσαν.

Dionys. Perieg. 1073.

Where Salmasius reads *Μυδὸν ὕδωρ* for *Ἰνδὸν ὕδωρ*; but possibly *Ἰνδὸν* expresses only something distant or remote. Ptolemy gives two sources of the Choaspis; one within the mountains of Loristan, and one beyond them in Media, with no less than three degrees of latitude difference: and this has an allusion to the river passing through a mountain, called Khoo-aspië, the *mountain of the horse*; but perhaps it may be better interpreted by Khoo-ab, the mountain river. Al Edrissi calls the mountain from which the Eulêus flows, Ader-van, the Khoo-Zerd or *yellow* mountain of Otter, because it tinges every thing that passes

till we know more of these rivers in their origin than we do at present; but it has been proved already that the Khorremabad cannot be assumed for the river of Susa, if it issues into the Shat-el-Arab; and that this is the fact, I am persuaded by the Oriental authorities of Otter, Petis de la Croix, and Thevenot's<sup>466</sup> map of the environs of Basra.

Such are the reasons which prevent me from embracing the system of Major Rennell; but as he has reserved his proofs for a future<sup>467</sup> publication, the question cannot be set at rest till we are acquainted with his reasons. Should they preponderate, no one will be more ready to subscribe to them than myself: it is not the support of an hypothesis, but the investigation of truth, with which I am concerned.

Some additional evidence favourable to the arrangement here proposed may be collected from the marches of Alexander, Antigonus, and Timour: they all entered the province apparently by following the course of the Khorremabad<sup>468</sup> river, by which they avoided the difficult passes in the mountains of Loristan, and came immediately into the plains of Susiana.

it with a yellow cast. It is thirty miles north of Susa, according to Al Edrissi. Otter, tom. ii. p. 54. Khoaspes is a name not confined to Susiana; there is another which joins the Indus, which is also a *mountain* stream. See Strabo, lib. xv. p. 697. The source of the Ab-Zal, which is here assumed for the Eulêus, is said to be thirty leagues above Susa, and eighty from its source to the sea, (Otter); and if this be true, it must rise in Media, for the breadth of Susiana is not 240 miles.

<sup>466</sup> Melchizedeck Thevenot's map is drawn up by a native of Basra, one of that sect called the Christians of St. John. Its object is to give the number of families of that persuasion

in Basra, and the towns in its vicinity. It contains one irrefragable proof that the Khorremabad river comes into the Tigris, for it lays down the Kierkè expressly as having that direction. Now the Kierkè is the river of Sus; it is to the east of the Khorremabad; and if the Kierkè comes into the Tigris, it can only be by its junction with that river, and that river cannot go to the east itself.

<sup>467</sup> See Geography of Heródotus, pp. 203. 334.

<sup>468</sup> Khorremabad is the principal city of Loristan, the district between Media and Susiana. It is a province of robbers from the beginning of time.



The detail of this route is more perspicuous in the march of Timour, because the journal of his progress is preserved in Cheref-eddin<sup>469</sup>, and the name of every river is recorded<sup>470</sup> as he passed it.

Timour commenced his expedition from Khorremabad, in March 1403<sup>471</sup>, and in eleven days reached the bridge<sup>472</sup> of Dez-Phoul, on the Ab-Zal in Susiana. The Ab-Zal is said<sup>473</sup> to rise thirty leagues above Tostar, to receive all the rivers of Susiana, and fall into the gulph of Persia at Iisn Modhi. All these circumstances are appropriate to the Eulêus of the ancients, and can be applied to no other river in the province. According to the route of Timour, all the tributary streams fall in on the eastern side; for he crossed<sup>474</sup> the Ab-Zal on the 16th of March, the Tchar-Dankè on the 18th, when he commenced the siege or

<sup>469</sup> See Cheref-eddin, tom. ii. liv. iii. c. 22.

<sup>470</sup> There were secretaries attendant on the army of Timour, who marked his progress day by day. On the completion of his expedition, or the success of his arms, the dispatches were made up from these journals, and sent to Samarkand, where they were registered and became archives. Cheref-eddin was allowed to inspect and copy these; and so far his evidence is of the highest importance, and, as may be supposed, correct. See *Histoire de Timur Bec*, Cheref-eddin, by Petis de la Croix, tom. i. p. 436. And *Arabsia*. Ed. Manger, tom. iii. pp. 783. 857.

<sup>471</sup> That is in reality, 1393. There is an error of ten years in the chronology of Cheref-eddin.

<sup>472</sup> Dez-Phoul is the bridge of Dez, which was both a bridge and a dyke, to pen up the waters, and raise them to supply the city of Tostar, which was on an eminence. This dyke was a mile in length, with forty-two great arches, and as many small ones. The work is attributed to Sapor Zulectaf; and there was

another such bridge at Asker Mokrem, eight leagues from Tostar. Cheref-eddin says, the great arches were twenty-eight, which with the small ones made up fifty-five. It is possible that this bridge, or something to represent it, is much more ancient than Sapor; for there is a singular expression in Strabo, p. 728. τὰ μὲν ἐν Σῶσι ἐν μεσογείοις κείναι ἐπὶ τῇ Χοάσπῃ ποταμῷ, περὶ αὐτῆς, κατὰ τὸ ζῦγμα. "Susa lies inland upon the Khoaspes, farther from the sea than the bridge." This is precisely applicable to Tostar on the Ab-Zal, beyond the bridge of Dez-Phoul at this day. The bridge anciently might be only a bridge of boats [or ζῦγμα] on the road. The erection of Sapor is both a dyke to pen the water, and a road. See Casaubon in loco. The Choaspes and Eulêus are allowed to be the same river by most of the modern geographers; possibly they are two sources of one river.

<sup>473</sup> See Otter, tom. ii. p. 55.

<sup>474</sup> Thus Alexander passed the Choaspes in his way to Susa. Q. Curtius, tom. i. p. 323.

received the surrender of Tostar, which employed him till the 19th of April, on which day he passed the Dou-Dankè on his march to Persis. These two streams, one on the east and the other on the west of Tostar, are said to be derivations from the Ab-Zal, made by Sapour Zulectaf, who divided the channel on the west into four, and that on the east into two, which on this account received their name; for Tchar-Dankè<sup>475</sup> signifies four rivulets, and Dou-Dankè two. Whether this was done for the purpose of defence or irrigation is not said: but if they are not more ancient than the time of Sapour, they can have no reference to the march of Antígonus. The other rivers which Timour passed before he reached the Tab or A'rosis are in their due order; the Khooroo-Kan-Kendè on the 22d of April, the river of Ram Hormuz on the 23d, and the river of Fei on the 24th: all these streams are said expressly to join the Ab-Zal. If then the Dou-Dankè is an artificial cut, which did not exist in the time of Antígonus, the Khooroo-kan-Kende is the Kópratás of Diodôrus and Strabo, and the river of Ram Hormuz is their Pasitígris<sup>476</sup>.

This arrangement comprehends every requisite prescribed by

<sup>475</sup> Dankè, I conclude, is the same word as Danka, Tanka, Tunka, mentioned before at Tanka banka, the white river. Tanghè is a stream or canal in Herbert, p. 136. Tanghè-dolon, Ecbar-Tanghè, the great aqueduct. Tanghè Buzzurt, Persic.

<sup>476</sup> The names of these rivers are Persian, and of the age of Timour; doubtless they have likewise Arabic and native appellations, as well as Greek, and this is one perpetual source of obscurity. The Khuru-kan-Kende I should interpret the river of Khawn-Khurus, that is, *King Cyrus*; and I should suppose it represented by the Κορος μέγας of Dionysius, the

Great Koros, which he evidently makes a river of Susiana. (See Lin. 1072.) There is another Koros, Kurus, or Cyrus in Persia, which is the Bend Emir or Noble River that falls into the lake Bakteghan, and is noticed by Strabo, Pliny, and Ptolemy. It is called Kar by Ebn Haukal, (p. 99.) and Cqer by Al Edrissi; but the Koros of Dionysius joined with the Khoaspea is evidently in Susiana, and perhaps the same as the Khuru-kan-Kendè. This at least will be sufficient to prove the difficulty of reconciling the ancient with the modern names.

ancient geography : it corrects the misconception of Pliny ; it reduces the march of the Grecian armies to a consistence with that of Timour ; it presents a river navigable by a Grecian fleet, and fixes a limit to that navigation, as intersected by the great public road from Rhagian<sup>477</sup> to Susa ; it gives a line to that road, existing possibly to this day ; and it specifies the distances on that road east and west, correspondent to the routes still preserved in the Oriental geographers. If all these coincidences are imaginary or fictitious, how are we to distinguish them from reality ?

Protracted as this discussion may appear, it will meet with indulgence from all those who have ever attempted to obtain a knowledge of this province. It is the duty of a commentator to render his author intelligible : this I have endeavoured to effect,

<sup>477</sup> Rhagian is written Rhegian, Arreggian, Argan, Argoun, and Arjan : it has a bridge called Becar and Baccar, about thirty miles from the sea, and lies on the high road from Shiraz to Susa, and thence to Vasis. The route in Ebn Haukal stands thus, from Argan

	Merhileh.
To Bazar, -	1
To Ram Hormuz, -	2
To Askar Mokrem, -	3
To Shuster, -	1
To Jondi Sapour, -	1
To Sus, -	1
To Corcoub, -	1
To Teib, -	1
	—
	11

Teib borders on the territories of Vasis. Vasis or Waseth is at an equal distance, that is 50 leagues, from Bagdat, Baara, Koofa, and Ahwaz. Its name implies a *centre*. Otter, t. ii. p. 47.

Bazar is a *market* on the river Fei : its proper name is Souk. Ebn Haukal, p. 74.

The Merhileh or day's journey from Ram Hormuz to Shuster are four, agreeing with the four days' march of Alexander, and three days of Timour, who as a Tartar moved faster than a Greek. A merhileh, however, is a day's journey of a caravan, considerably more than a day's march of an army. But Timour did not go by Asker Mokrem, and the direct line does not require it.

The distance from Ram Hormuz to Ahwaz (on another line) is given at nineteen leagues in Otter. It can hardly be more to Shuster, that is short of sixty miles. This is a distance Alexander might well march in four days, and Timour in three.

Diodorus Wessel. tom. ii. p. 211. makes it four days' march ; p. 330. one day. In the first instance, it is the march of Alexander, where he copies the same authorities as Q. Curtius ; in the latter, it is the march of Eumenes, and from some different author.

and in the accomplishment of this I could not have compressed the matter into a narrower compass. Errors, however, there may still be, and this whole dissertation is a recantation of former errors. Fresh sources of information, patient research, and more earnest contemplation of the subject, where system does not prevail, must lead to the discovery of truth. If I have been mistaken, I am open to conviction; if I am convicted of error, my industry will still be meritorious; but if I can maintain my ground, I have developed one of the most obscure and intricate subjects that the ancients have left us for disquisition. A few words more on the general nature of the province will now bring the subject to a conclusion.

## SUSA, SHUSHAN, TOSTAR.

	Longitude.	Latitude.
From Ferro by Ptolemy, -	84° 0' 0"	— 34° 15' 0"
From Ferro by d'Anville, -	66° 31' 0"	
By d'Anville's chart, orbis } veterib. notus. -	66° 10' 0"	
Ptolemy corrected by Gossellin,	60° 0' 0"	
Otter, p. 50. tom. ii. Oriental,	86° 30' 0"	— 31° 30' 0"
Ibid. Etuals, - -	74° 20' 0"	— 31° 30' 0"

That Susiana was a favoured province under the early dynasties we have sufficient evidence in the fortification of Susa, and in finding that it was the principal treasury of the empire; out of this, Alexander paid the debts of his army at the expence of twenty thousand talents, celebrated the nuptial feast of the Macedonian officers with their Persian brides, and rewarded the

services of all that had a particular claim to distinction ; out of this, he made a donation to the veterans he discharged at Opis, undertook the support of all the children born to his followers in Asia, and found supplies for upwards of fifty <sup>478</sup> thousand native troops raised in Persia ; and yet this treasure was not exhausted at the time of his death, for the war between Antígonus and Eúmenes was caused by a contention for this capital, which was still the richest in the empire. We are not, however, to suppose that this accumulation arose from the revenue of a single province, though the province itself was productive above all others. Strabo says, that the return of the crop was an hundred or even two hundred <sup>479</sup> fold. Cotton, sugar <sup>480</sup>, dates, rice, and every grain of the finest species are enumerated amongst its natural productions ; damasked steel, silk, cotton <sup>481</sup>, linens, and cloth of gold, amongst its manufactures. Such was Susiana in the early ages, and such it continued to the time of Sapor, and almost to the dissolution of the empire by the Agwhans. It is now a prey to every Arab invader, harassed by the Turkish arms from Basra on the west, and by the Persians from Shíraz on the east : a settled despotism protected the provinces it oppressed ; the transient usurpations of the present day ravish not only the produce, but destroy the stock.

<sup>478</sup> Thirty thousand came out of Persis only, healthy to foreigners. The natives are tawny ; under Peucestas. basanés.

<sup>479</sup> Niebuhr, tom. i. p. 216. mentions durra or millet as admitting such an increase.

<sup>480</sup> See Otter, vol. ii. p. 50. Who says the country is hot in the extreme, and un-

<sup>481</sup> Linteum virgatum Coreubæum, striped linen of Corcub, is mentioned by Al-Edrissi, p. 123. Corcub is upon the Gyndes. See Otter, vol. ii. p. 51.

## PASSAGE OF NEARCHUS FROM THE AROSIS TO SUSA.

WE left Nearchus at anchor in the mouth of the A'rosis<sup>442</sup>, preparing to enter upon the navigation along the coast of Susiana; a course which, he informs us, he considered as attended with the greatest hazard and difficulty. Three shoals have been already noticed; one between the A'rosis and Kataderbis, styled Bahr-il-Khan; a second between Kataderbis and Khore Moosa<sup>443</sup>, called Karabah<sup>444</sup>; and a third between Khore Moosa and the Khore Abdillah, named Meidan-Ala. These three shoals give exactly the three days' course of the fleet along the coast of the Delta, which, without previous information, must have been in some degree unintelligible.

The fleet left the A'rosis on the sixth of February, after taking on board a supply of water for five days, as the pilots informed them they were not certain of procuring any, while they were crossing the mouths of the streams which divide the Delta<sup>445</sup>; for the coast was low, as they said, and the course along it in no great depth of water, on account of shoals which extended far out into the sea. This circumstance would consequently oblige them to stand off; and, when they came to a berth, to anchor at a great distance<sup>446</sup> from shore. The first day's

<sup>442</sup> Oróatis, Tab, or Endian.

<sup>443</sup> Query, Whether Khore Wastah?

<sup>444</sup> See *supra*, and M'Cluer, p. 30.

"When the pilot first makes the *banks*,  
"they are called Karabah on the East, and  
"towards the West Ali-Meidan."

<sup>445</sup> *χώραν . . . ἐν χερσὶν ἐπὶ μέγα ἐς τὸν ὠκεόν*  
*ἐπέχουσιν*. So I read with Gronovius, *ἐπὶ*  
*χουσιν* for *ἐπέχουσιν*; and I now advert to  
*ἐν χερσὶν* for the last time; which the translation

gives, as usual, *vadosum ac scopulosum*;—on a coast where a stone is not to be found. *ἐπὶ μέγα ἐς τὸν ὠκεόν ἐπέχουσιν*, expresses the breadth of the Ali-Meidan, which extends out fifteen or sixteen miles in the widest part.

<sup>446</sup> See the note of Gronovius in *loco*, where he shews that the translators were as bad interpreters as they were seamen.

KATADER-  
BIS LAKE.  
MARGAS-  
TANA  
ISLAND.  
February 6.  
Day 37,  
or 128.

course, indeed, partook not of these dangers, for the shoal Barcan<sup>487</sup>, between the A'rosis and Kataderbis, is not of so great extent from the coast as those that succeed on the west, and the mouth of the river is sufficiently open, even in its appearance at the present day<sup>488</sup>. The shoal, however, seems to be noticed by the expression of Arrian upon the conclusion of the course; for he says, after a passage of about thirty miles they came to anchor at the mouth of a lake<sup>489</sup>, rather than an harbour<sup>490</sup>, where there was abundance<sup>491</sup> of fish. The place was called Kataderbis, and an island which lay at the mouth, Margastana. In these two words there seems an evident allusion to an island still called Deree, and a tract called Dorghestan; but of the Bender Madjour which d'Anville, from the Turkish Geographer, allots to this station, I find no traces in any English chart. One-and-thirty miles, measured upon M'Cluer's chart, bring Nearchus to an anchor between the two islands Deree and Dereebouna, and one-and-thirty English miles end between Dereebouna and the main. In either position, Nearchus might have but one island in contemplation, and consequently have no cause to mention more. Their modern names are such as they have from the pilots; but, however applied, certainly relate to the inland Dera of Ptolemy, which gives name to the eastern channel of the Eulêus, evident in Deurak, still existing,

<sup>487</sup> The Tenagos Arenosum of Ptolemy is the shoal Barcan in this very position between the Eulêus and the A'rosis.

<sup>488</sup> See M'Cluer's chart, three fathom on the bar.

<sup>489</sup> ἐν τῷ στόματι λίμνης ἰχθυώδους.

<sup>490</sup> The castle of Hiss Modhi is on the eastern side of this lake or bay. This is the mouth of the Ab-Zal, in the estimation of the

Oriental geographers; and of the Eulêus, according to Ptolemy.

<sup>491</sup> This is most strikingly characteristic of the Bahr-il-Khan [Barkan], which abounds with fish; and the water on the shoal is considerably smoother than off from it. I have been over it in boats about five times. Mr. H. Jones.

and in the tract Dorghestan, allied, if I may vary the orthography, to the Morghestan<sup>492</sup> of Arrian.

The river which comes into this bay, I have already marked as the Gaban, or eastern branch of the Eulêus separating from the Karoon channel at the head of the Delta, falling in nearest to the Tab, or Endian, and embracing, not only one island, but several in its channel. Upon a review of Ptolemy at this place, observing that he mentions the mouth of the Eulêus immediately next to the A'rosis, and has the Mosêus only, without noticing the other channels between the Eulêus and the Tigris, I am more confirmed in my opinion, that his Mosêus is the branch we now call the Karoon, with Khore Moosa at its issue; and that the Mesênè comprehends, not only the strip between the Cossisa-Bony and Bamishere, but perhaps as far as the Karoon also.

The two islands at the mouth of this bay are not accurately named, for Bouna is possibly a channel rather than an island, and seems to correspond in contradistinction to the Cossisa-Bony, either as such, or as a boundary and termination of the Delta. The Oriental geographers place a fort here, called Medhi and Modhi<sup>493</sup>, perhaps in the situation of Moshure, in Mr. Dalrymple's chart; and it is probable that in the bay, formed by this mouth of the Eulêus, d'Anville's Bender Madjour<sup>494</sup> may be discovered; it cannot be where the map of his Memoir places it; for the coast there is covered with the shoal Barcan, and d'Anville's three<sup>495</sup> maps are all particularly incor-

<sup>492</sup> I do not search for an error in the initial letter; for I believe the change to arise from some Oriental orthography, which I cannot discover.

<sup>493</sup> Hisn-Modhi, Arx-Modhi, Hisn-Arx, Castellum. Gol. ad Alfrag. p. 248. Xin. idem.

<sup>494</sup> I do suppose it to be the Mahirooyan of Ebn Haukal; but I cannot ascertain whether he calls the bay by that name, or places it to the east of the bay. It cannot be, I think, on the shoal Barcan.

<sup>495</sup> Map of Asia, first part. Tigris and Euphrates. Memoir.



rect on this part of the coast. I make the less scruple of asserting this, because M'Cluer has not only laid down this coast totally different, but all our English charts; these have at least the authority of the native pilots, and M'Cluer, I conclude, his own observation; for he has added the soundings, and that he would hardly have ventured to do without sufficient authority, on a coast where the land cannot be approached near enough to be seen, and where the course must principally, if not wholly, be directed by soundings.

SHOAL.  
First day's  
course.  
February 7.  
Day 38,  
or 129.

I am now to conduct the fleet across the shoals which fringe the Delta; and in this course I discover the Karabah and the Meidan-Ala as manifestly as in a modern map. On the first day they sailed as soon as it was light; and, forming a line by single ships, each followed in order, without deviating to the right or left, through a channel marked out with stakes in the same manner as the passage<sup>46</sup> between Leukas and Akarnania, in Greece: but, says Arrian, at Leukas there is a firm sand, and if a vessel grounds she is easily got off again; but in this passage it was a deep mud on both sides, so that a staff could find neither support or resistance; or if, when the vessel grounded, the people got overboard to ease her off, they found no footing, but sunk in higher than the waist. Now it is true that a muddy shore, and the staking out a dangerous passage, are not peculiarly characteristic of one coast more than another, for the practice is sufficiently general; but it is very extraordinary that this circumstance should be so decidedly noticed on this part of the coast by Arrian, Ptolemy, Pliny, Marcian, Al-

<sup>46</sup> And many other passages in different parts of the world. Lymington river in Hampshire. And in the year 1786, I saw the Elephant man of war just launched at Busselton, brought down the creek marked out in the same manner.

Edrissi, and Thevenot, with little variation. There is a bay between <sup>497</sup> the Mosêus <sup>498</sup> and the Eulêus called Sinus <sup>499</sup> Pelôdes in Ptolemy, and Sinus Stelôas in Marcian. Salmasius <sup>500</sup> and Hudson will not allow Marcian to retain his own reading, but reduce him to the standard of Ptolemy. The truth is, however, that he has preserved one feature, and Ptolemy another, both belonging to the same appearance of the coast; for these two terms translated are nothing more than *Muddy Bay* and *Stake Bay*; proving that Marcian is not a mere copyist of Ptolemy, but sometimes also a commentator. Pliny bears testimony to the former circumstance, and Thevenot <sup>501</sup> mentions the entrance of the Karoon as still marked by a stake of palm wood, when he arrived at the mouth. Let us now consider the nature of the Karabah, as it has been already noticed, and we shall discover the cause that gives rise to this circumstance. The term of *broken ground* <sup>502</sup> applied to this shoal arises from the irregularity of the soundings and overfalls on it, and the fiction of a city sunk here is noticed by several authors. The soundings, according to M'Cluer, vary from twelve to seven and eight,—to ten, seven, and five fathoms. As soon as the modern pilot finds these, he keeps away west for the Meidan-Ala; the course of Nearchus seems to have been across this bank, and, as nearer shore, naturally with shallower water; but the inequality of the bottom as naturally offered the means of exploring a channel across. This is the channel that we may conclude was marked

<sup>497</sup> An additional proof that Ptolemy's Eulêus is the Dorack channel. His Mosêus, the Karoon.

<sup>498</sup> Between the Karoon and the Dorack.

<sup>499</sup> Στελῶας κόλπον, Πηλῶδη κόλπον. Marcian.

<sup>500</sup> In alterutro mendum esse necesse est.

Sal. Plin. Ex. p. 701.

<sup>501</sup> In p. 16.

<sup>502</sup> Karabah, broken; from the Persian root Karab, to break. Mr. Jones.

Kheraib, the plural of Kherab, bad, broken.

out by the natives. An attention of this kind is perfectly consistent with the commercial spirit of the province, and proceeds upon the same grounds as the navigation inland. A passage over or through the shoal is necessarily implied in the account of the journal; the accomplishment of it is reconciled to reason by the method I have pursued, and in whatever state the coast may now be, it can hardly afford a ground of objection to my statement of what it might have been at the distance of so many centuries. Amidst all disadvantages of ancient navigators, they had one advantage arising from the little depth of water the construction of their vessels required.

Through a passage, then, of this sort, Nearchus conducted his fleet thirty-seven miles, and then came to an anchor without being able to approach the shore. Here they took their repast on board, and gave the people some time for refreshment. I have no hesitation to fix this anchorage in the Khore Wastah, the issue of the Selege stream<sup>503</sup>, for there the measure given agrees perfectly with M'Cluer, and there he seems to terminate the Karabah. It is a minute circumstance, but worth noticing, that both Ptolemy and Marcian agree in making the eastern commencement of the bay, Pelôdes, at some distance from the Eulêus, and their termination of it is at the Mosêus, or Karoon, which would naturally happen, as they take no notice of the intermediate channel, or Khore Wastah.

SHOAL.  
Second day's  
course to  
DIRIDOTIS.  
February 8,  
Day 39,  
or 130.

From this anchorage the fleet weighed in the night, after allowing a short respite from fatigue, but they had no longer a shoal to cross; they sailed in deep<sup>504</sup> water, says Arrian, mani-

<sup>503</sup> It amounts to thirty-two geographical miles, equal very nearly to thirty-seven miles English. <sup>504</sup> *κατὰ βάθια*, four fathoms, would be *κατὰ βάθια* to a Greek fleet.

festly marking the course along the border<sup>505</sup> of the Meidan-Ala, which every vessel bound for the Basra Channel still pursues. They sailed all night and the whole of the following day till past noon, when they finished their course at Diridotis, a village in the mouth of the EUPHRATES.

The distance assigned for this passage across the Meidan-Ala is nine hundred stadia, or upwards of fifty-six miles, a measure which is very dubious<sup>506</sup>, as Nearchus informs us he was able to keep no regular account, and the statement of the moderns is so various, that I prefer giving their own distances to fixing any determinate measure of my own.

## D'ANVILLE.

Geog. Miles. G.M.

Memoir <sup>507</sup> . Measure from the Karoon to	} 30. add 7 — 37
Khore Abdillah, - - - -	
Map of Asia, first part, - - - -	33. add 7 — 40
Map of Tigris and Euphrates, - - - -	30. add 7 — 37

## M'CLUER.

Large Sheet from Wastah to Khore Abdillah,	— 40
Small Sheet from Wastah to Khore Abdillah,	— 34

## DALRYMPLE.

Mr. Howe's Chart from Karoon to Khore	} 46
Abdillah, - - - -	

<sup>505</sup> Upon this *flat* there are six fathoms on the southern edge, five fathoms on the middle, four at the upper end. The pilot seldom goes under five, or five and an half.

M'Cluer, p. 30. "When you come within two fathoms, you are still near ten miles from shore," and this part is dry at low water.

<sup>506</sup> The distance that a vessel runs, in crossing the Meidan-Ala, depends entirely how she

makes it from the Kheraib. Vessels, as they do not haul so soon up to the northward, run a much less distance than boats in crossing it. I have crossed it in both. Mr. H. Jones.

<sup>507</sup> I have eighteen draughts to consult, but these are all worth specifying. Seven miles are added for the difference between the Karûn and Wastah; but some of the charts make it ten.

DALRYMPLE.

Geog. Miles. G.M.

Mr. Howe's Chart from Wastah to Khore	}	—	62
Abdillah, - - -			

NIEBUHR.

From Karoon to Khore Abdillah (dubious), 40 add 7 — 47

If such are the fluctuations of the moderns, how are we to reduce a journal of the age of Alexander? M'Cluer's small sheet is a corrected draught, and his corrections usually promote a coincidence with Arrian; but how are we to reconcile his estimate with that of Mr. Dalrymple's chart? It is true that I esteem Mr. Dalrymple's, in point of disposition, as the best of any which I have seen; but I have reason to consider all its measures as too large; this will appear more fully when I come to treat of the coast in general.

Diridôtis, or Terêdon<sup>308</sup>, is the termination of the voyage by sea, and evidently both forms mark its connexion with the Diglito of Pliny, and the Tigris of the Greeks, as they are both related to the Oriental Degela, or Didsjile<sup>309</sup>. Diglidoth<sup>310</sup>, intimating a town situated near the Degela, will give the two forms of Diridôtis and Terêdon, with the usual interchange between R and L, which appears in many other instances. This place Arrian calls a village, where there was a mart established for the importation of the incense and other produce of Arabia,

<sup>308</sup> Terêdon built by Nebuchodonozar, as a fortress against the Arabs. Eusebius from Abydênus apud Grotium, lib. iii. c. 18. Ex notis Clerici.

He seems also to have built out the water, perhaps at Abadan. See Scaliger Emend. Temporum.

<sup>309</sup> Niebuhr writes, Didsjile.

<sup>310</sup> One reading of Diglito in the MSS. of Pliny is Diglath, equivalent to Degelah.

Pliny means by Diglito, the upper part of the Tigris,—*quâ tardior fluit*; and gives Tigris as a second name, where the course is as swift as an arrow.

and its situation fits it for the conveyance of them up to Mesopotamia, either by the old canal at the Khore Abdillah, or by the Shat-el-Arab to Susiana, or Persis; and this circumstance has recommended it to the notice of all the ancient geographers. I have already mentioned that Ptolemy places Terêdon between the two mouths of the Tigris, which evidently proves that he considered d'Anville's Choabedeh, as a mouth of the Tigris, and not of the Euphrates. And as I have before accounted for Ptolemy's Sinus Mesanius, the whole of ancient geography is thus rendered consistent with itself, and with our modern charts.

It will seem extraordinary that, when the course of Nearchus lay up the Tigris, or Shat-el-Arab, he should pass the mouth of that channel, and bring his fleet to an anchor in the Khore Abdillah, which he calls the mouth of the Euphrates. This, according to Pliny's account, was just going so much out of his way, and causing a necessity of re-measuring his course back again the same distance. Pliny's estimate, computed by d'Anville's method, is reduced to twelve miles and an half; and the real distance, taken largely, may be about ten. If, therefore, it is asked why this happened, the answer will exhibit one of those minute coincidences which nothing but truth could produce. It is a circumstance connected with the nature of the navigation, and it continues to be the practice of the pilots to the present hour, for thus M'Cluer describes the course:

.... "After<sup>\*\*\*</sup> these soundings in Khore Gufgah, you will quickly shoalen to four one-half fathoms, and this the pilot calls Muçan<sup>\*\*</sup>; and from that, three one-half or three fathoms

<sup>\*\*</sup> M'Cluer's Memoir, p. 30.

<sup>\*\*\*</sup> The Mesène.

“ to Bussorah Bar<sup>13</sup>. With these soundings, he still stands  
 “ across [the mouth of the Shat-el-Arab], west or west by  
 “ north, till he deepens to five fathoms in Khore Abdillah, and  
 “ there he anchors till the next flood tide; or, if he has suffi-  
 “ cient tide to carry him over, he stands away to clear a bank  
 “ between Khore Abdillah and the Bussorah river.”

I now beg leave to notice, that the pilot on board Nearchus steered exactly the same course as M'Cluer's Karack pilot two thousand years afterwards; so durable is the stamp that Nature has set upon this coast. The reason of this is obvious; for the projection of the Meidân-Ala throws the vessel off the coast till she is opposite to the Khore Abdillah, and the level of the land is so low at the mouth of the Shat-el-Arab, that it is much safer for her to make land in the Khore, than to stand up the Shat-el-Arab at once, when the coast on either hand is too low to be visible.

While Nearchus lay at anchor in this Khore, which he calls the Mouth of the Euphrâtes, intelligence was received that Alexander was on his march to Susa. He determined, therefore, to return *back*<sup>14</sup>; and then, by pursuing his course up the Pasi-Tigris, to join him in the neighbourhood of the capital.

Here it is that, in my endeavour to explain the following day's course, I am obliged to differ totally from d'Anville. I appeal to the candour of the reader, that no captious love of opposition may be imputed to me, for I have too great a deference to that great geographer's opinion, ever to depart from it without sufficient grounds.

<sup>13</sup> The bar at the mouth of the Cossisa-  
 Bony, or Shat-el-Arab, as I use it.

<sup>14</sup> Ἐρθεν καὶ αὐτοὶ τὸ ΟΠΙΣΘ ἱππεύον, p. 357.

In conducting Nearchus from Diridôtis to Susa, d'Anville carries him into the Shat-el-Arab, as high as Agínis or Zeinè, and thence by the Haffar Canal through the interior of the province up to the bridge, where he met the army and terminated his expedition.

My reasons for assuming a different course are these :

1st, Pliny's Chaldéan Lake, and Arrian's Lake at the mouth of the Tigris, are not the same.

2dly, Arrian's Pasitígrís is never the Shat-el-Arab, and in this he is supported by Strabo.

3dly, In the passage of Nearchus up the river, no notice is taken of the canal of Haffar, but only upon Alexander's course down to the gulph.

4thly, Nearchus is said to go up the Pasitígrís, Alexander is said to come down the Eulêus.

5thly, Nearchus, in his course from Diridôtis, sailed with Susiana on his *left hand*.

#### 1st, THE CHALDEAN LAKE.

NEARCHUS sailed <sup>515</sup> across a lake into which the Tigris falls at its issue into the gulph ; but if this lake exists, or ever did exist, it must have been at the mouth of the Shat-el-Arab, and could not be the same as Pliny's Chaldéan Lake ; for that commences below Ctêsiphon, and ends at Aphlè ; and he adds afterwards, that the waters, after spreading in this form, are again collected into a stream, and in that shape take their

<sup>515</sup> ἀπὸ δὲ τῆς Λίμνης εἰς αὐτὸν τὸν ποταμὸν ἀνάπλες γάδιοι ἑξακόσιοι ἴπποι καὶ κώμη τῆς Συσίδος ἢ καλέουσι  
"Αγιν. Ar. 357.



course to the sea. His <sup>516</sup> Chaldéan Lake, therefore, is not at the mouth of the Shat-el-Arab, but inland. This, I conceive, is the first source of d'Anville's mistake; and Pliny's error in assuming Pasitigris, as the appellation of the Tigris and Euphrates united in the Shat-el-Arab, is the ground of his making the fleet go up that channel, instead of the real Pasitigris. D'Anville follows him in this assertion, and here is his second mistake.

For, 2dly, Arrian's Pasitigris is always that stream which, flowing east of Susa, joins the Eulêus at some distance below that capital. I have proved this by the concurrent testimony of Strabo, Diodorus, Q. Curtius, and Cheref-eddin, all according with Arrian. It did not approach the city; it was a broad, deep, and navigable river: it crossed the road from Persis; and, after its junction with the Eulêus, the united stream separated again, sending off one branch eastward, now called the Gaban<sup>517</sup>, and another westward, which is the Karoon; and, finally, its characteristic distinction is the title of *Pasi*, or *North Eastern Tigris*, in opposition to the great stream of that name, which is now styled the Shat-el-Arab<sup>518</sup>. This is manifestly the

<sup>516</sup> Susa a Persico mari absunt ecl. m. pass. qua subiit ad cam [ea] classis Alexandri Pasitigri. Vicus ad Chaldaicum Lacum vocatur Aphle; unde Susa navigatione lxx. m. pass. absunt.

This Pasitigris is the Shat-el-Arab, and Pliny supports d'Anville in supposing the passage up that stream; but his Lacus Chaldaicus will not accord with d'Anville. Tigris inter Seleuciam et Ctesiphontem vectus in Lacus Chaldaicos se fundit. Eosque lxx. m. pass. amplitudine implet. Now lxx. miles will not reach from Ctêsiphon to Aphlê by two hundred, and still Aphlê is at the lower end of this lake. See lib. vi. c. 27.

But Pliny, lib. vi. c. 23. followed a different authority. He there is giving an account of this passage of the fleet from the historians of Alexander, and there we find (not the Chaldéan lake) but a lake at the mouth of the river, Ostium Euphratis. Lacus quem faciunt Eulêus et Tigris juxta *Characem*, inde Tigri, Susa. By the Tigris Nearchus never could have reached Susa; out of the Tigris he might have passed by the Haffar Canal round the head of the Delta into the Pasitigris, but this was not in the contemplation of Pliny.

<sup>517</sup> The Eulêus of Ptolemy.

<sup>518</sup> The Shat-el-Arab is always styled *De-gela*, or the Tigris, by Al-Edrissi.

system of Arrian ; and Strabo, in explaining the error of some historians who attributed this appellation to the Shat-el-Arab as the general channel which received *all* the different rivers, as manifestly confirms the system of Arrian, and proves the concurrent opinion of *all* the authors in the age of Alexander.

3dly, If Nearchus had gone up the Shat-el-Arab, he could have entered the Eulêus, or Pasitigris, only by the Haffar Canal ; but if Nearchus had sailed up this canal, there is much more reason to conclude it would have been specified in a course he performed himself, (where it is not specified,) than in the descent of Alexander, where it is mentioned, and in which he was not so immediately or personally concerned. This, considering the tenor of the journal, is one of the strongest evidences which can be produced ; for an artificial cut was no common object to a Greek, and a similar circumstance is preserved at Herátemis, though the passage was neither explored, or made any part of the navigation. An omission, it is true, is only a negative proof, but in an instance of this kind it must have considerable weight.

4thly, There is no inconsistency in mentioning Alexander's descent by the Eulêus, and Nearchus's ascent by the Pasitigris, for Nearchus entered that river from the Eulêus, where it bore this appellation in contradistinction to the Tigris, and Alexander embarked at Susa, where that source, which passes the capital, is called the Eulêus. The various heads <sup>52</sup> of this stream cause confusion in the interior ; the various arms, as it approaches

<sup>52</sup> En Turquie, en Perse, et aux Indes, une même rivière prend le nom de toutes les villes et villages où elle passe, et ainsi il est mal aisé que les voyageurs s'accordent bien pour ces noms. Tavernier, lib. v. p. 733. Amst. edit.

the sea, create disorder upon the coast. It is thus that the Eulêus and Choaspes are transmutable, and thus that the Pasitigris is confounded with the Tigris and the Eulêus. If Alexander embarked at Susa, the stream was necessarily the Eulêus, and this name was continued to the sea. If Nearchus entered the Pasitigris, it was at the confluence of that river with the Eulêus. By the latter he would have reached Susa, by the former he effected his junction with the army. Add to this, that in the ascent of Nearchus, Arrian takes his account from the journal of the commander himself; in the descent of Alexander, he follows Ptolemy and Aristobôlus. In the history, the Pasitigris is not mentioned; in the journal, no notice is taken of the Eulêus<sup>520</sup>: the reason is plain, Alexander on his descent did not enter the Pasitigris at all.

5thly, The expression of Arrian is precise, when he asserts that Nearchus sailed *back again* from Diridôtis; but it is not equally apposite, if he returned only to the Shat-el-Arab. It appears evident that he had intended to go up that channel by the course he held, but that the account he received at Diridôtis informed him that the king was directing his course to Susa; this intelligence carried him back to the Pasitigris, as the readiest way to join the army; while the navigation up the Shat-el-Arab and through the Haffar canal was either unknown to him at that time, or not in his contemplation. But this is not all; he passed on his return from Diridôtis with Susiana on his *left*. Could this be true, if he had sailed up the Shat-el-Arab? Let any advocate of Mr. d'Anville inform me, if ever the

<sup>520</sup> It is meant to assert this only, that in the journal the Eulêus is never once mentioned as the river Nearchus sailed up. Compare the History, lib. vii. p. 282. with the Indica, p. 357.

tract on the west of the Shat-el-Arab was called Susiana by any geographer, ancient or modern? Whether it was possible for Arrian to terminate that province west, at the Euphrates<sup>521</sup> instead of the Tigris? No. It was always styled Arabia, by the concurrent testimony of historians and geographers, as it is to the present day, and it was always possessed by Arabs, whose influence reaches to the very walls of Basra.

If, however, it can be supposed that Nearchus made his<sup>522</sup> Euphrates the boundary of Susiana, the difficulty will be increased; for then, in sailing up the Shat-el-Arab, the expression ought to have been, that he proceeded up the Shat-el-Arab *through Susiana*, not with Susiana *on his left*; for, if the Tigris is the boundary, in going up it, Susiana must be on the *right*.

The whole of this error originates<sup>523</sup> with Pliny; he knew, from the historians of Alexander, that the fleet went up the Pasitigris; but his Pasitigris is the Shat-el-Arab, and theirs is the river connected with the Eulêus. If this error had not misled so great a geographer as d'Anville, all that has been said would be superfluous.

These are my reasons for adopting the following system; and it will now be easy to conduct Nearchus from Diridôtis to the Pasitigris by the course which is here assumed. These are the words of Arrian: "At Diridôtis<sup>524</sup>, intelligence was received

<sup>521</sup> The Khore Abdillab is the Euphrates of Arrian.

<sup>522</sup> The Khore Abdillab.

<sup>523</sup> It originates actually with those Greek writers whom Strabo reproves for the same mistake.

<sup>524</sup> Ἐσκαῦθα ἀγγέλλεται Ἀλέξανδρον ἐπὶ Σέσση

εἰλησθαι· ἦθιν καὶ αὐτοὶ τὸ ΟΠΙΣΘ ἔπλειον ὡς κατὰ τὸν Πασιτίγρην ποταμὸν ἀναπλώσαντες συμ-  
μῆσαι Ἀλεξάνδρῳ. Ἐπλεον δὲ τὸ ΕΜΠΙΛΑΙΝ ἐν  
ΑΡΙΣΤΕΡΑ, τὴν γὰρ τὴν Σασσίδα ἔχοντες· καὶ παραπ-  
λίωσι λίμνην ἐς ἣν ὁ Τίγρης ἐσβάλλει ποταμός· ὃς  
ῥέων ἐξ Ἀρμενίας παρὰ πόλιν Νίνου πάλαι ποτὶ  
μεγάλην καὶ ἐνδαίμωνα τὴν μέσσην ἰώντῃ τε καὶ τοῦ

“ that Alexander was advancing to Susa ; the fleet, therefore, re-  
 “ turned back again from Diridôtis, in order to proceed up the  
 “ Pasitígriis, and join the army. They sailed accordingly on their  
 “ return, with Susiana on the left, and passed in their course a  
 “ lake that receives the river Tigris, which rising in Armenia  
 “ (not <sup>525</sup> far from Ninivè, formerly a great and flourishing city)  
 “ encloses Mesopotamia on the east, as the Euphrates surrounds  
 “ it on the west. From the line where this lake joins <sup>526</sup> the sea,  
 “ up to the river itself, is a course of six hundred stadia ; and at  
 “ the issue [of the river into the lake] there lies a village on the  
 “ Susian side of the stream, which is called Agínis : this village is  
 “ only five hundred stadia from Susa ; but by the course which  
 “ the fleet took in its passage [from Diridôtis] to the Pasitígriis,  
 “ the extent of the coast of Susiana was not less than two <sup>527</sup>  
 “ thousand stadia. Arriving at the mouth of that river, they  
 “ sailed up it through a country rich and populous <sup>528</sup>.”

Ἐυφράτης ποταμὸς (ἢ Μισσοποταμίας ἐπὶ τῇδε κλη-  
 ζομένη) ποιεῖ· ἀπὸ δὲ τῆς λίμνης ἐς αὐτὸν τὸν  
 ποταμὸν ἀνάπλους γάδιοι ἱκανόσιοι ἴσα καὶ κύμα τῆς  
 Σωσίδος ἢ καλίσσιν Ἀγίνιν· αὕτη δὲ ἀπέχεται Σώσαν  
 γάδιοις ἐς πεντακοσίους μῆχος τῷ παράπλῳ τῆς  
 Σωσίδος γῆς ἔστι ἐπὶ γόμα τῷ Πασιτίγριδος ποταμῷ  
 γάδιοι διχίλιοι. Ἐθίβει κατὰ τὸν Πασιτίγριον αὐτὸν  
 αὐτίπλοι διὰ χώρας δικεμένης καὶ ἰσχυροῦς.

<sup>525</sup> παρὰ πόλιν Νίνου, Juxta Ninum. Schma-  
 der. But it is not near Ninus or Ninivè that  
 it rises. παρὰ allows more latitude.

<sup>526</sup> ἐς αὐτὸν τὸν ποταμὸν, where it ceases to be  
 a lake, and assumes the form of a river.

<sup>527</sup> I should have been glad to understand  
 this of the whole coast of Susiana on the gulph,  
 from the A'rosis to Diridôtis ; but the text  
 says expressly, μῆχος τῷ παράπλῳ τῆς Σωσίδος γῆς  
 ἔστι ἐπὶ γόμα τῷ Πασιτίγριδος ποταμῷ γάδιοι δι-  
 χίλιοι. This can refer only to the return of  
 the fleet from Diridôtis to the Pasitígriis ; and

if so, Arrian now takes the same number of  
 stadia (2000) from Diridôtis to the Pasitígriis,  
 say to Hisn Modhi, as he took before, on the  
 whole coast from the A'rosis to Diridôtis.

<sup>528</sup> I have reviewed the whole of this pas-  
 sage, and rendered it according to the sug-  
 gestion of Schmieder. He has convinced me  
 that I was mistaken, but not persuaded me  
 that he is right himself. I trust, however, to  
 his authority, which certainly solves some dif-  
 ficulties, but not all. He is forced to give up  
 the distance of 500 stadia from Agínis to Susa,  
 which, though corroborated by Strabo, is to-  
 tally inadequate : it only proves that both  
 Strabo and Arrian copied from the same jour-  
 nal, and that there was an original error in  
 Nearchus's own account. Place Agínis at  
 Zeinè (with d'Anville) or not, the difficulty  
 is the same ; we have at most only 1100 stadia  
 from the mouth of the Shat to Susa, 600 to

In commenting on this passage, Mr. d'Anville calls the lake the Chaldéan Lake, which it has been proved not to be; but the Chaldéan Lake of Pliny is in Chaldéa, and he has another at the junction of the Tigris and Euphrates, near Charax, the fort of Spásinus; and this is the lake which corresponds with that of Arrian, mentioned in the text.

The existence of such a lake at the mouth of the Tigris, or Shat-el-Arab, must now be sought for; and, if we take a view of the map, we find a tract on the west of that stream called Dauasir by Niebuhr, the extreme point of which between the Khore Abdillah and the Shat-el-Arab we must sink, to find room for this lake at the mouth of the Tigris; and that this was really under water in the age of Alexander, and rose gradually to its present appearance, either by accumulation or artificial means, we have abundant evidence to prove. The very name<sup>30</sup>, if I am not mistaken, implies inundation; and Niebuhr supposes the whole level as high as Hasseinad, the burial-place of Hassan-ben-Hanefie, to have been under water, and even that it would be so at this day, if the inundation were not prevented by dykes. "Every where, (he says<sup>31</sup>), canals are cut to convey water to the date grounds; and as the water of the river "is saturated with slime, the land here must, in a succession of "ages, have been raised considerably to have obtained its proper level." This supposition of Niebuhr's is in perfect harmony with an assertion<sup>32</sup> of Pliny's, that the inundation of the

Agfais, and 500 from that place; that is, correction.

little more than 70 miles, where we ought to find more than double that number.

<sup>30</sup> Vol. ii. p. 169. Amst. edit.

<sup>31</sup> Non alio loco plus proficere aquæ terra

<sup>32</sup> Kerme-sir, the hot country; Daua-sir, the watery country. But I say this under

invectæ. Plin. lib. vi. c. 27.

waters is no where so extensive as in this part of the river. Another circumstance is the rising of Abadan, a town at the mouth of the Shat-el-Arab, at the extremity of the Dauasir; for it seems possible to trace this from its emersion; first, in the form of an island, and afterwards as part of the main occasioned by the departure of the waters. I looked for it in two Apphádanas of Ptolemy, but the position of neither answers. Marcian<sup>32</sup>, however, expresses himself thus: "Near this part<sup>33</sup> of "Susiana lies an island called Apphádana<sup>34</sup>, which some attribute to Arabia." This seems to shew the emersion of land at the point of the Dauasir, between the age of Alexander and the time of Marcian. The connexion of this island with the main, or rather the withdrawing of the waters which separated it, seems to have taken place in a later period; for that it was united in the time of Al-Edrissi is evident. "Abadan, (he "says<sup>35</sup>), is a small fort, but still in good condition, situated "near the sea, which is intended for watching and protecting "those who frequent this part of the coast, it lies on the western "bank of the Degela [Tigris], in a part where that river particularly *spreads itself over the land*<sup>36</sup>." The same author adds

<sup>32</sup> Marc. Heracl. p. 17. Geog. Min. Hudson:

<sup>33</sup> The Pasini Charax.

<sup>34</sup> The translation reads Apphana. There is a coin in the possession of Mr. Cracherode, and in Dr. Hunter's Museum, inscribed ΕΡΕΔΗΝΕ, which is by some imputed to Aspendus; but if it should appear that the Syrian Greeks possessed the mouths of the Euphrates, this word would read ΕΣΠΕΔΕΝΕ, not far removed from Apphadana.

<sup>35</sup> Est autem Abadan Arx parva quidem, sed integra, ad litus maris apposita, quæ inservit ad observandos atque protegendos eos,

qui subeant mare prædictum jacetque Abadan ab occidentali parte Degelæ [Tigris] amnis qui eo in loco maxime diffunditur super terram. Al-Edrissi, p. 121.

<sup>36</sup> Tout le pais est si bas que sans une digue que regne le long de la mer il seroit souvent en danger d'estre submergé. Tavernier, lib. ii. p. 243. I find nothing of this dyke in other authors, unless it be the dyke in the river mentioned by Niebuhr. But the passage concurs in the lowness of the land. In p. 245. he mentions the breaking of the dyke, and that then the waters came up to Basra.

a remarkable circumstance, which, though not connected with the inundation, is so uncommonly local, that it is worth inserting. "Six miles below Abadan lies Al-chasciabat, which signifies a stage raised upon piles in the sea, where there is a watch kept, and those who are appointed for that service repair to the stage in boats, and return by the same conveyance." This fact is so connected with the navigation of the Shat-el-Arab, that whether the duty of this watch was for the purpose of giving signals, or affording pilotage, it marks strongly the attention paid to the security either of the country or of the navigators, and that, no more than the lowness of the coast demanded. This stage seems evidently on the point of the shoal, between the Khore Abdillah and the Shat-el-Arab.

Such is the nature of the Dauasir at its termination, and such is the evidence to prove that there was a lake in the age of Nearchus<sup>37</sup>, where there is now land; that the land had emerged in the form of an island in the time of Marcian; and that, before Al-Edrissi wrote, it was united to the main. This is a fact of no small importance to ascertain, as the want of a lake at present forms one ground of objection to the authenticity of the journal. The name of Abadan still exists at the mouth of the river, in the Tschabde and Tschwabde of Niebuhr<sup>38</sup>, which he makes two villages, possibly out of one. McCluer has also an Abadan, but too high up the river, and on the eastern instead of the western side.

I have been the more particular in stating all the circum-

<sup>37</sup> Anno 326 A.C.  
400 post Ch.

Anno 1100 post Ch.  
<sup>38</sup> See Tab. LX. vol. ii. Amst. edit.



stances relating to this point of the Dauasir, on account of the numerous errors attending it; and I must now observe that though Arrian gives the distance of thirty-seven miles and an half, still with the extent of it up the Tigris I am not concerned. Niebuhr makes it thirty miles up to Hasseinad; but Mr. Jones<sup>339</sup>, who has passed frequently up the channel and down, seems to think, that the western bank is every where too high to admit of inundation, till within eight or ten miles of the mouth; but that part, he says, has undoubtedly been under water, and thus does the testimony of a living witness confirm our written evidence.

I am now, in conformity with the correction of Schmeider, to conclude that Nearchus has described this lake without entering it; and that though he has stated that it is only five hundred stadia from Aginis to Susa, he did not pursue this course, but preferred a much more circuitous one, by retracing his passage across the shoals, and returning to the Eulêus. In assuming this line of navigation, I must likewise revoke an arrangement of my own, in which I conducted Nearchus by the Khore Moosa into the Karoon, and by the Karoon up to the Pasitigris. By a better acquaintance with the Oriental geographers, I am persuaded that this statement was erroneous. I am persuaded, likewise, that Ptolemy<sup>340</sup> was guided by native authority or information, when he placed the mouth of the Eulêus at the next stream west<sup>341</sup> from the A'rosis; and that he is supported

<sup>339</sup> I incline to believe that the land between Khore Abdullah and the western bank of the Bussora river has, even within my own memory, increased considerably. Mr. H. Jones.

<sup>340</sup> The arrangement of Ptolemy is proved

by his longitude, and by a reference to Mercator's map, Asia, table v.

<sup>341</sup> About thirty miles west, according to McCluer.

in this assumption by Ebn Haukal<sup>340</sup>, Al-Edrissi<sup>341</sup>, Abu'l Feda<sup>342</sup>, Petis de la Croix<sup>343</sup> on Cheref-eddin, and Otter<sup>344</sup>. All these authors conspire in asserting that the Ab-Zal or Eulêus receives all the rivers of Susiana, and issues into the gulph of Persia, in the neighbourhood of Hisn Modhi, through a bay called Mahirooyan, in the district of Dorghestan, and between the shoals of Karabah and Barcan, or Bahr-el-Khan.

That Nearchus did not go up the Shat-el-Arab, as Pliny and d'Anville suppose, has been shewn already ; that he crossed the lake at the mouth of the Tigris, but did not enter it, is likewise proved by his sailing with Susiana on his left ; and that he went back again over the shoals he had passed before, is evident from the text of Arrian, and from the reason he assigns, which was, that at Diridôtis he received intelligence of the progress of the army from Persis to Susa.

Let us conclude then that Nearchus moved from Diridôtis with the tide<sup>345</sup> of flood ; his course across the Meidan-Ala was in deep water for a fleet of gallies, as there are two fathoms.

<sup>340</sup> Ebn Haukal (p. 75.) says, the streams of Khusistan from Ahwaz, Dourek, and Shuster, and all that rise in this quarter, are collected together at Hysn Modhi. And again, (p. 78.) near Hysn Modhi, on the sea-side, a great many streams are collected into one body of water, affected by the tides, flux and reflux.

<sup>341</sup> Al-Edrissi (p. 120.) writes, all the rivers of Kourestan [Khoozistan] issue into the sea near Mahruian, not far from Hisn Modhi, p. 123.

<sup>342</sup> Ebu'l Feda dit que la riviere de Toster se jette dans le Golfe Persique auprès de Hisn Modhi. Otter, tom. ii. p. 55.

<sup>343</sup> Petis de la Croix (tom. ii. p. 168. on.

Cheref-eddin) writes, Ab-Zal, fleuve dont une branche passe a Tostar, elle passe par tout le Couristan [Khoozistan] & se decharge dans le sein Persique a Hisn Modhi. The Mahruian of Al-Edrissi is written Mahar-rooyan by Ebn Haukal, and is probably the Bender Madjour of d'Anville, misplaced in the shoal of Barcan.

<sup>344</sup> Strabo, lib. xv. p. 729. Some say that all the rivers of Susiana fall into one stream, that of the Tigris.

<sup>345</sup> Nearchus's pilot probably weighed anchor with the young flood from the Khore Abdullah ; at least a pilot of the present day would do so. Mr. H. Jones.

upon it at that time near the coast, and he found no difficulty in passing it before. Let us next conduct him across the Karabah, with the same caution he had adopted in his former passage. During all this course, Susiana, that is, the low land of the Delta, continues on his left hand, and he now reaches the bay into which the Eulêus issues by the channel called Gaban in the modern charts.

This bay lies between the two shoals of Karabah and Barcan, and at the western point, where it terminates on the gulph, we may compute fourteen hundred stadia from Diridôtis, taking off one hundred<sup>548</sup> for the breadth of the bay to Kataderbis; and from this point, if we suppose Nearchus to have turned northward directly for the Gaban channel, we must conclude that he reckoned six hundred stadia more from the same point up to the mouth of the Pasitigris; that is, the junction of that stream with the Eulêus. This, indeed, is but forty Roman miles, and seems an estimate much too short to carry us to the confluence; but it is demonstrable that Arrian makes out his computation of two thousand stadia by this method, for his language will admit of no other construction. "The length<sup>549</sup> of the course along the coast of Susiana [from Diridôtis] to the mouth of the Pasitigris is two thousand stadia." These are his express words, and they admit of no remedy, unless we have made the estimate of his track from Diridôtis to the bay too long; and then all that we take off from that may be added to his passage up the river.

This is a difficulty that has induced Salmasius to reckon this

<sup>548</sup> From Kataderbis to Diridôtis was 1500 stadia; from Diridôtis back to the western point of the bay we may reckon 1400, or less,

<sup>549</sup> μήκος τῆ παραλίου τῆς Σουσίαν γῆς ἕως ἐπὶ τῇ στόμα τῆ Πασιτίγριδος εἰς αὐτὴν διασχίσειν.

measure back again to the A'rosis, and to turn that river into the Pasitigris; a supposition utterly impossible; as a variety of transactions inland take place between the Pasitigris and A'rosis, on the marches both of Alexander and Timour; and if they are distinct rivers inland, their issue must be distinct likewise; for there is no authority, either ancient or modern, to make them confluent streams. There are no data, indeed, for fixing the point of confluence where the Pasitigris joins the Eulêus; but the confluence itself is certain, for it has been shewn already that all the rivers of Susiana communicate with the Eulêus, and all the streams on the east of that river fall into it, and have one common issue in this bay near Hisn Modhi.

It is this reason more especially which induces me to conclude that Nearchus went up this bay and this channel, in preference to any of those which cross the Delta, for this is the Eulêus or main stream of Ptolemy; and that Arrian considered it in the same light we seem to have proof, when he brings down Alexander with the fleet from Susa; for he there informs us, that the course was down the Eulêus to the Delta; that at the Delta Alexander sent off all the vessels that were unfit for service, by a canal (that is the Haffar) into the Tigris; and that he proceeded himself with the remainder down the Eulêus to the sea. This evidence seems conclusive, and more so, when it is added that he circumnavigated<sup>550</sup> the whole tract which lies between the Eulêus and the Tigris. This is perfectly in correspondence

<sup>550</sup> Ἀλέξανδρος δὲ περιπλεύσας κατὰ τὴν θάλασσαν ὅσον μεταξὺ τῆς τοῦ Ἑυλάειου ποταμοῦ καὶ τοῦ Τίγριτος ἐπέχεν ὁ Αἰγιάλος τῷ κόλπῳ τοῦ Περσικοῦ, ἀπέπλεε κατὰ τοὺς Τίγριτα ἕως ἐπὶ τὸ γροῦνίδιον. Arrian, lib. vii. p. 282.

with his navigating the two extreme branches east and west of the Indus; and the same ambition or vanity actuated him to sail on the gulph of Persia as upon the Indian ocean.

This circumstance also solves an apparent contradiction, when it is said that Nearchus went up the Pasitigris, and that Alexander came down the Eulêus: both assertions are correct; for Nearchus ascended the Pasitigris to meet the army on its progress; and when the army proceeded to Susa, the fleet descended the Pasitigris again, and came up the Eulêus towards the capital<sup>44</sup>. But when Alexander embarked on board the fleet in the Eulêus, he went down that stream to the sea; and though he passed by the Pasitigris at its confluence, he did not enter it, but proceeded straight down to the gulph. This furnishes a reason why the Pasitigris only is mentioned in the *Journal*, and the Eulêus is alone noticed in the *History*.

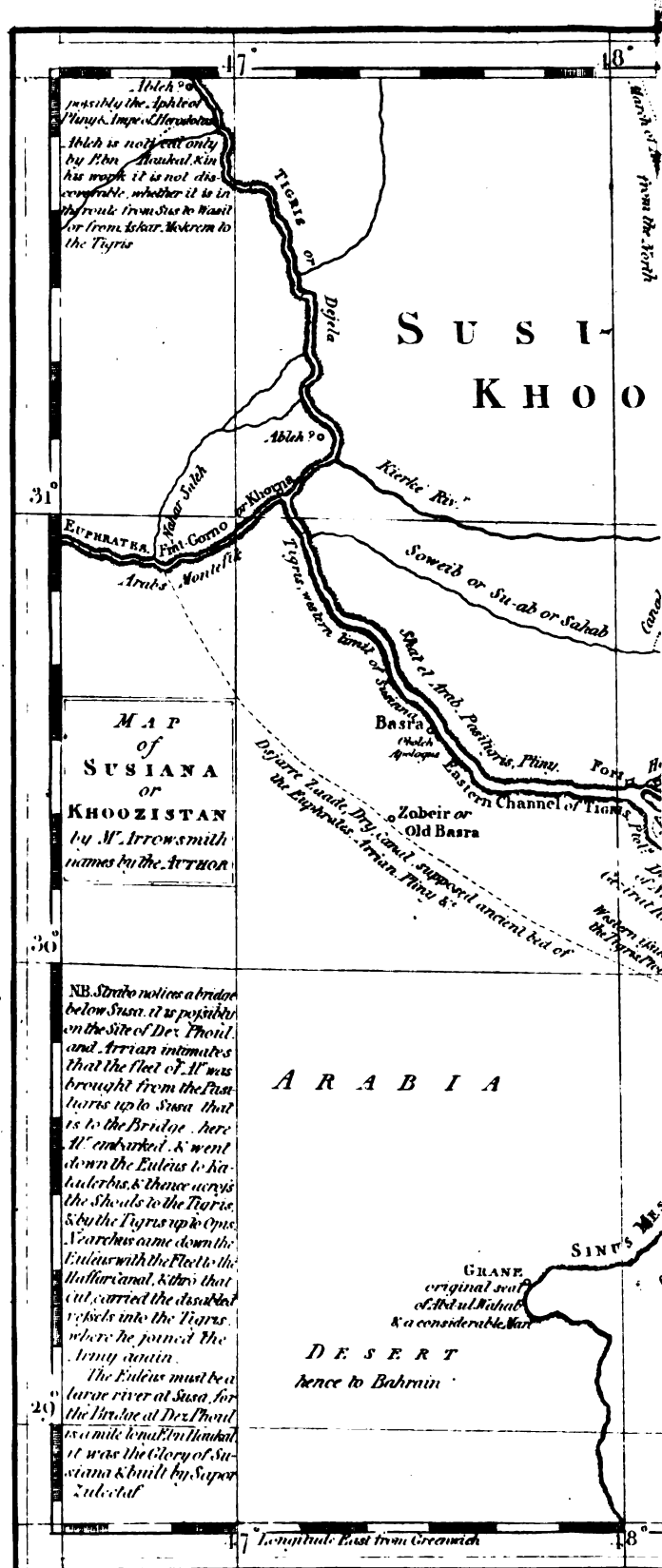
With much diffidence I now submit the following statement to the reader; for greater disagreement, in so small a space, is hardly to be found:

	<i>Stadia.</i>	<i>Miles Eng.</i>
From the A'rosis to Kataderbis,	500	
to Khore Wastah,	600	
to Diridôtis,	900	
	<hr/>	
	2000	125

<sup>44</sup> ἀναπλύνοντες αὐτῶν τὴν ναυτικὴν ἐν τῇ Σοσίαν γῆν . . . κατέβη κατὰ τὸν Ἐυλαῖον ποταμὸν εἰς τὴν θάλασσαν. Ar. lib. vii. p. 281.

It is evident from this passage, that the fleet went down the Pasitigris from the bridge, and

came up the Eulêus towards Susa, probably to Dez Phoul, the bridge of Dez, where there would be a bridge in that age as well as in later times, for it is on the great road from Rhagian to the Tigris.





	<i>Nautic Miles.</i>	<i>Miles Eng.</i>
Arrian from the A'rosis to Diridôtis,	—	125
D'Anville's Map of Asia,	105	nearly 122
D'Anville's Memoir,	75	87
M'Cluer's large sheet,	80	93
M'Cluer's small sheet corrected,	90	105
D'Apres,	80	93
Gough's chart,	81	94
Niebuhr <sup>554</sup> ,	90	105
Dalrymple's chart by Mr. Howe,	137	160
Pliny,	—	265
Pliny, by another <sup>555</sup> estimate,	—	250
Pliny, halved by d'Anville,	—	125
Marcian of Heraclea, 3430 stadia,	—	214
Marcian, by Salmasius, 1830 stadia,	—	114
Ptolemy, six <sup>554</sup> degrees,	360 <sup>555</sup>	417

Such is the fluctuation of this estimate, and perhaps, out of the whole list, M'Cluer is the only one who formed his state-

<sup>554</sup> Niebuhr possibly saw M'Cluer's papers at Basra.

" This must be erased, because Niebuhr visited Bussora before I believe M'Cluer to have been in the Company's service, certainly before he ever thought of chart-making. " I was on board the vessel of which M'Cluer was an officer in 1784, at the time he made his first chart. The vessel was called the Bombay Grab. I know M'Cluer saw Niebuhr's drafts belonging to me at Bussora." Mr. H. Jones.

<sup>555</sup> This is another proof that Pliny read

the same number of stadia as Arrian, and reduced them in the proportion of eight to a mile.

<sup>554</sup> In reality six one-half. Terédon, 80°. Oroatis, 86° 30'.

<sup>555</sup> Rather 358.5, for the distance lay nearly on a parallel, namely on the parallel of 30° of latitude; and a degree on this parallel is 59.75 miles English. But the distance which Ptolemy would reckon equivalent to a degree would be no more than 433 stadia, and his 6° in this latitude would hardly amount to 288 miles English. Bishop Horsley.



ment from observation, or the account of the native pilots. Arrian differs from him only twenty miles; and on a coast, where, he informs us, Nearchus could keep no true reckoning, it is extraordinary that his deviation should be no greater. Pliny had evidently found the same number of stadia, but doubled the distance by using the Olympian stadium in his reduction. Mr. Dalrymple's chart by Mr. Howe exceeds in reality all but Ptolemy; and it is a great disappointment to find that a chart, upon which depends the best information for elucidating Arrian, should be so defective in its measurement. It is, however, by no means ascertained that the head of the gulph is correct in any chart; on the eastern part, even M'Cluer may be considered as dependent upon the information of his pilots, and though their estimate is sufficiently just to answer their purpose, it is far inferior to the observation of an English navigator.

After stating these various, and indeed contradictory reports, it is not to be expected that precise accuracy in regard to the two thousand stadia is attainable; but upon the whole it seems evident, that as Arrian reckons this number from the A'rosis to Diridôtis, he estimates likewise two thousand stadia on the return from Diridôtis to the mouth of the Pasitigris. The extent of my error, if I have committed one, will be, that I have terminated this distance with too short an interval between the bay and the confluence of the Pasitigris with the Eulêus. However this may be, the arrangement upon the whole is consistent: it makes the history of Arrian correspond with his journal of the voyage; it reconciles both to Ptolemy, and to the account of the Oriental geographers; and it brings the fleet and the army.

to a junction at the point where they would be united at this day, if such an expedition was to be carried on in this province.

In order to effect this junction, Nearchus proceeded from the bay up the Gaban channel to the Pasitigris, through a country rich and populous; and then, an hundred and fifty stadia or fifteen miles up that river to a village, where he found an ample supply for his fleet, not only of necessaries, but of every thing that could minister to the conveniency and luxury of life. Here he offered sacrifices for the preservation of the fleet and the success of his expedition. The usual games attended this ceremony, and the festivity natural to plenty and security succeeded to the fatigues of the voyage.

Nothing is mentioned in the text which may induce us to suppose that Nearchus had any thing farther in view than waiting for intelligence of the army; but he is in a position from whence he might have gone up either the Eulêus or the Pasitigris, with almost equal facility, according to the account he might receive. And here we shall leave him to the enjoyment of his repose, till I have conducted the two armies under the command of Alexander and Hephêstion on their march to Susiana. The line of their progress is easily discernible; but, as there were no enemies to subdue, and the whole was the return of a victorious army, we have no geographical particulars from our classical historians; it is a bare outline, which, if necessary to be filled up, can only be effected by recourse to modern authorities: it shall, therefore, no longer be dwelt upon, than is necessary to combine the movements of the separate divisions, to establish dates, and to render the whole consistent in all its parts.

We left Alexander at Giroft in the latter end of December,

preparing for his progress by an inland route eastward of the mountains, while he detached Hephêstion with the elephants and gross of the army, with orders to cross the mountains, and proceed along the coast of the gulph, through that level which is called the Kermesir. I ought not to know more than my director, and he says, that Hephêstion was ordered to take this route because it was winter, and the winter was milder on the coast than inland. This is too true, for the mildness extends to heat, putridity, and unwholesomeness. It appears to me that Arrian has not preserved the real cause of this order, for Alexander seems to have acted upon this occasion, as upon all others, from the time he had no more enemies to subdue; that is, because he was desirous of obtaining a knowledge of his empire; and he detached Hephêstion through the Kermesir for the same reason he had ordered Crâterus to proceed through Arachôsia from the Indus, and Nearchus to survey the coast.

However this may be, Alexander himself appears to have moved from Giroft before the conclusion of the year, some days previous to the sailing of Nearchus, and the first place to which we trace him is Pasagardæ<sup>356</sup>; for at Pasagardæ is the tomb of

<sup>356</sup> A barren list of names will afford little Bagian. It has probably been the common information; but I subjoin the route from road in all ages; for the principal places mentioned are of considerable antiquity, and existed in the age of Alexander.

		Miles.	
KARMANIA.	{	From Giroft to Canat Alsciam,	20.
		to <i>Maun</i> *,	20
		to <i>Valase-gerd</i> ,	20
		to <i>Adbercan</i> ,	20
		to <i>Giaraman</i> ,	20
		to <i>Kescensian</i> ,	3
		to <i>Rostack-Arrostack</i> ,	40—143

\* Maun is the town, perhaps, where Alexander received Nearchus; the Sal-Moun of Diodorus.

Cyrus, whether he perished in the war with the Masságetæ, or was gathered to his fathers with the Euthanasia so beautifully described by Xénophon: and at Pasagardæ we find Alexander punishing Orsines for embezzlement, and plundering the tomb of a native sovereign. It is foreign to my purpose to enter into this transaction, still I cannot help noticing that the aspersions thrown upon the conduct of Alexander on this occasion by Q. Curtius are neither consistent with his character, nor countenanced by Strabo, Arrian, or any writer of estimation; but Q. Curtius debases the vices of the Conqueror with as little judgment as he extols his virtues. In both instances, it is the language of exaggeration without restraint, in which the author sacrifices truth, not to the love of falsehood, but to warmth of imagination and brilliancy of expression.

Pasagardæ<sup>397</sup> is confounded with Persépolis by Arrian, upon Alexander's first visit to the province, when he burnt the palace in that city, of which, says Arrian, he now repented; and

		<i>Miles</i> —143
PERSIA.	{	From Giroft to Zamm Al-modhi, 15
		to <i>Darbe-gerd</i> , 15
		to <i>Seban</i> , 9
		to Bercan, 12
		to Narecan, 12
		to Fasiban, 12
		to <i>Tamsan</i> , 18
		to <i>Fasa</i> or <i>Pasa-gardæ</i> , 12
		<hr/> 242

[N. B. The names in *Italics* alone are found in the modern maps.]

<sup>397</sup> Phasa still exists, and Golius makes it the head of the district *Darab*, (so named from Darius,) one of the four into which the province is divided; the other three are Kobad, Sapor, and Ardeshir. See d'Anville. But Niebuhr says this distinction is now lost. Two I know to be retained, and I have great reason to believe the others are also. Mr. H. Jones.

whether it was the effect of inebriated phrensy, revenge for the injuries of Greece, or the insolence of victory, any one of these inducements was sufficient cause of regret. Pasa, or Phasagardæ, was mistaken by many of the Greek writers, and the deception is natural; for the translation of Pharsa-gerd would regularly be Persepolis, and Pharsa-gerd differs from Phasa-gerd by a single letter. The former, however, signifies the city or capital of Phars; the latter a city, as Golius<sup>538</sup> informs us, cooled by the north-eastern gales.

On the present occasion, Arrian distinguishes this city from Persépolis; for we trace the progress of the army regularly from Pasagardæ to the capital; and it would be well if we had any characters to mark the route, but these will be searched for in vain: we learn only that Alexander was there, by the circumstance at his arrival of his constituting Peucestas satrap of the province, who had saved his life in India, and who was now so prudent a courtier as to assume the habit, and learn the language of the country. He had before been raised to the rank of Guard<sup>539</sup> of the Royal Person, and afterwards conducted to Babylon a body of twenty<sup>540</sup> thousand native troops, raised in his province, and armed in the Macedonian manner. This is a circumstance which developes the future designs of Alexander more than all the conjectures of his historians.

Persépolis, in its Greek form, evidently marks Pharsa-gerd as its Persian original; but the name was not preserved even in the

<sup>538</sup> Gol. ad Alfrag. p. 114.

<sup>539</sup> The Συματοφύλαξις, or *body-guard*, were originally only seven: Leonnátus, Hephéstion, Lysímachus, Aristónous of Pella, Perdikkas of

Orestis, Ptolemy and Python of Eordæa. To these Peucestas was added when Alexander was in Karmania. Arr. lib. vi. p. 269.

<sup>540</sup> Others say thirty thousand.

middle ages, nor does any other name appear but Istakhar, or Estakhar, which declined into a village as Shiraz<sup>561</sup> rose into a capital, under the auspices of the Mahomedan conquerors. The name of Estakhar<sup>562</sup> itself seems now almost to have perished, for there is not even a village<sup>563</sup> at the ruins, now called Chel-minar or the Forty Pillars, or at Naxi-Rustam in the neighbourhood, both which bespeak the magnificence of the ancient capital, and the workmanship of that age<sup>564</sup>, which is discoverable in the Egyptian ruins. The consequence is, that Al-Edrissi has no route to Estakhar, but to Shiraz<sup>565</sup> only, and Estakhar lies thirty-six miles<sup>566</sup> south-east of Shiraz. The route, therefore, which I insert serves only to shew a comparative distance, and the difference between Shiraz and Estakhar is just so much out of the direct modern road.

From Persépolis nothing intermediate appears till the arrival of the army at Susa, except the junction of the fleet at the Pasi-

<sup>561</sup> Written Zjiraes, Xiras, Djiraus, Chiraz, &c. founded anno 336 of the Hejra. Gol. p. 116.

<sup>562</sup> Sir William Ouseley has expressed a doubt, whether the ruins at Estakhar may be the temple in Elymais plundered by Antiochus, the remains of Persépolis, or an erection of the Arsácides or second Persian dynasty. The first it can hardly be; the second and the last are both probable. The worship of Mithra, symbolized throughout, is much more conspicuous under the line of the Arsácides; and Sapor Zulectaf has as much architectural honour attached to his name by the Orientals as Solomon himself. Preface to Ebn Haukal, p. xxvii. Highly gratifying would it have been, if this most excellent and learned Orientalist had been enabled by public munificence, as was once proposed, to visit this celebrated

spot, and others of equal celebrity in the East; but alas! laudatur et alget!

<sup>563</sup> Niebuhr resided at a village in the neighbourhood.

<sup>564</sup> The building of Persépolis is imputed to Caiumaras, the first name in Persian mythology. The ruins of Chel-minar are given in Le Bruyn, Niebuhr, &c. &c.

<sup>565</sup> Route from Phasa to Schiras. Al-Edrissi, p. 127:

	Miles.
From Phasa to <i>Kar</i> ,	15
to Rebat,	12
to Haramim,	12
to <i>Schiraz</i> ,	21
	60

<sup>566</sup> Golius ad Alfrag. p. 116. D'Anville gives the same distance, but makes it north-east.

tigris; the route, however, is evidently the same as the modern one, which enters Susiana at the bridge on the Tab or Arosis, called Baccar, within a small distance<sup>567</sup> from Ragian. At Ragian a variety of routes terminate which come on the one hand through Persis, and on the other through Susiana; for here seems to be the point where the Tab will first admit of a bridge, and consequently it is the centre of communication between the two provinces. Hither we may bring Hephêstion, who came along the coast; and by this road Parmenio<sup>568</sup> must have entered Persis from Susiana, when Alexander passed higher north, upon his original invasion of the province.

Let us then suppose Alexander on his progress from Persépolis to Ragian, his march cannot lie out of the route<sup>569</sup> which I have given from Shiraz<sup>570</sup>; and at Ragian let his army halt, till I have brought up Hephêstion to a junction.

If it were necessary to trace the whole progress of this division from the time it left the army in Karmánia, there are routes by which it is not impossible to mark the greatest part of its general direction; and if the work of Beton and Diognétus were extant, it would be no little gratification to compare it with our modern journals; but, as the matter stands, I have little more than a barren list of names to present, without interest or information,

<sup>567</sup> See Al-Edrissi, p. 126. He says a bow-shot.

<sup>568</sup> Arrian, lib. iib. p. 130. *κατὰ τὴν αἰμὴν*  
*ἐκ τῆς ἐς Πέρσας φέγουσας.*

<sup>569</sup> See this route in Ebn Haukal, p. 110. 60 farsangs—say 180 miles.

<sup>570</sup> Route from Shiraz to Ragian. Al-Edrissi, p. 126;

	Miles.
From Shiraz to Giouan,	15
to Chalan,	12
to Charrara,	15
to Korbemam,	15
to Horaidan,	12
to Rasain,	22
to Ragian,	21—112

and therefore refer it to the margin. Pietro della Vallé<sup>171</sup> travelled from Mina to Lar, but labouring under illness, and in a litter; and Le Bruyn<sup>172</sup> has a route from Gomeroon to Lar. From Lar, the route to Giouar falls into a journal<sup>173</sup> of Al-Edrissi's, probably at Mai. Passing from hence to Giouar, in

<sup>171</sup> Route from *Mina* to Lar. Pietro della Vallé, vol. v. p. 418:

From *Mina* to *Cincinhalion*,  
to *Issin*,  
to Kuscir, perhaps \* Rudaciour,  
to Kaharistan,  
  
to Guri-bizingon,  
to Tengi-dalan,  
  
to *Kherwand*,  
to Boudini, a Caravanserai,  
to Basli,  
to Lar,

<sup>172</sup> Route from Gomeroon to Lar. Le Bruyn, vol. ii. p. 70:

Gomeroon †.  
Bandalic. Bandally. Sir T. Herbert.  
Geaje. Gacheen. Sir T. Herbert.  
Koreston. Courastan. Sir T. Herbert,  
p. 118.  
Goer-baser-goen.  
Tang-boc-dalon. Tanghy-Dolon. Sir  
T. Herbert.  
Gormoet. Whormoot. Sir T. Herbert,  
and then Owr-mangel, Lar.  
A Caravanserai.  
Basicle.  
Lar.

The route from Mina and that from Gomeroon join at Kaharistan, which Le Bruyn writes Koreston, and from thence to Lar, the names, however disfigured, are the same. This course consequently continued unchanged from 1620 to 1693. In Al-Edrissi, p. 131. we can only discover that the route went to Sciara, that is, Rud-sciour, the salt river of Pietro della Vallé, the Kariss or Koriss of Ptolemy, the Salsoe of Pliny.

<sup>173</sup> Route from Siraf to *Giouar*, or *Finn-abad*. Al-Edrissi, p. 135:  
(Siraf is near Keish, and the mart of the gulph formerly. *Milu*.)

From Siraf to Borcana,	-	-	-	-	21
to Adhercan,	-	-	-	-	} 12
or Ras-Al-acbe,	-	-	-	-	
to <i>May</i> ,	-	-	-	-	18
to Kabrend,	-	-	-	-	18
to Chan-Arademerd,	-	-	-	-	18
to Giary,	-	-	-	-	18
to Dast-Surab,	-	-	-	-	9
to Giouar,	-	-	-	-	15—129

\* Because he mentions a salt river here.

† Tavernier, *It.* v. p. 747. *It.* has the same route as Le Bruyn, and with equal variation in the orthography.



the road to Shiraz. From Giouar there are two routes to the Tab, or A'rosis; one along the coast noticed by Al-Edrissi, through Gennaba<sup>33</sup>, and another inland, as I conceive, by Kaseroon. It is apparently the latter that was pursued by Hephéstion; for at Sítakus, where the fleet lay for one-and-twenty days, we have intelligence that this army was not very near the coast, and there can be no reason for its approach towards the sea afterwards. I find no route from Kaseroon to Ragian, but a view of the map will shew, that it must soon fall in with the road from Shiraz to that town, which has in all ages been the direct communication between Persépolis and Susa, as it is at this day between Shiraz and Tostar, if it exists; and, from the bridge at Ragian to Susa or Tostar, it is short of an hundred and forty miles. I give this whole account subject to

The route from Lar to Giouar ought to fall into this at Adhercan, or Ras-Al-acbe, which are the same; for Ras-Al-acbe signifies the top or passage of the mountains. These mountains are the chain, which I suppose to run inland from Dâhr Asban, and to produce both the Nabon and Darabin rivers. Acbe is the Acaba of the Arabs, a pass in the mountains.

<sup>33</sup> Route from Giouar to Giannaba. Al-Edrissi, p. 125:

	<i>Miles.</i>
From Giouar to Kazeroon ( <i>Kazeroon</i> ),	48
to Rosaic, -	12
to <i>Tauag</i> -	24
to <i>Giannaba</i> , -	36
	<hr/>
	120
From Giannaba * to Ragian by estimation,	38
	<hr/>
	158

The road inland, from Giouar to Ragian, may be thirty miles shorter, or about 130 miles upon the whole; so that the march of Hephéstion from Mina to Ragian would be,

	<i>Miles.</i>
by estimation, to Lar, -	145
to Giouar, -	129
to Ragian, -	130
	<hr/>
	404

And as he took the interior circle along the coast, this bears a due proportion to the march of Alexander. Whether these extracts are worth the trouble, I cannot say; they come out in proportion. Al Edrissi's is the Roman mile, 75 to a degree.

\* Giannaba is the Gennaba of d'Anville, the Gunowah of M'Cluer.

the correction of any traveller, who is acquainted with the actual state of the country at the present hour, having no living authority to consult; and I am sufficiently persuaded, without correction, that the desolation of these provinces has removed the land-marks which the ancient or early writers have enabled me to point out. With due allowance for this natural obscurity, I submit the whole to the judgment of the reader, and shall conduct the army, once more united, to the Pasitigris, and to a bridge on that river where Nearchus is to conclude his expedition.

The Pasitigris is evidently a river which the army passed before it could reach Susa: this appears, from the preceding deductions, to be the Ram Hormuz river of Timour, the second stream east of the Eulêus. And if the Kópratas of Strabo and Diodôrus answers to the Khooroo-kan-Kende of Timour, as I conclude, that stream joins the Pasitigris previous to the junction of the Pasitigris with the Eulêus. This will afford the means of ascertaining the position of the bridge, if ever the interior geography of Susiana shall be obtained: but there is a still more correct method of arriving at the same end, which is by following the road from Ragian to Susa, and fixing the bridge where this line intersects the Pasitigris at Ram Hormuz; in this, there can hardly be an error of more than a few miles either way, and this is the position I shall assume. This route is given in Ebn Haukal, and d'Anville makes the distance about an hundred and forty-five geographical miles: this, from other comparative measures<sup>114</sup> in the province, is apparently just.

<sup>114</sup> Diodôrus, lib. xix. p. 334. says, it is means that the army of E'umenes were so twenty-four days' march from the Pasitigris to many days in performing it. Persépolis. This seems too long, unless he

From this sum, if we deduct forty or fifty miles, to give the distance from the bridge to the capital, we obtain a geographical reduction as near the truth as our information will enable us to collect.

I shall next consider the whole distance from Giroft to Susa, which stands thus :

	<i>Miles Geog.</i>
From Giroft to Phasa, - -	242
From Phasa to Shiraz, - -	60
From Shiraz <sup>33</sup> to Ragian, - -	112
	<hr/>
	414
Allowed distance from Ragian to Susa, -	145
	<hr/>
	559

In the same space, d'Anville allows eight degrees, or four hundred and eighty miles, which, with a seventh added for road distance, makes a total of near five hundred and forty-nine miles, a difference not worth regarding ; but it ought to be remarked, that Alexander departed from this route, by going to Persépolis, which adds fifty or sixty miles to the sum. This we compensate, however, by taking the measure, not to the Pasitigris, but to Susa ; so that if we fix the total at five hundred and sixty geographical miles, equal to six hundred and fifty-four miles English, there can be no error of importance.

The distance is, from the Pasitigris,  
to Ragian, 100 miles,  
to Shiraz, 112  
to Persépolis, 36—248

Eûmenes moved, therefore, at the rate of

little more than ten miles a-day ; but Diodorus mentions that it was in the height of summer, and the heat intolerable.

<sup>33</sup> Thirty farsang, Ebn Haukal, p. 110,

i. e. 120 miles.

Let us now refer to the dates. If the army moved from Giroft on the 25th of December, as I have proved it might have done, and Nearchus arrived at the village on the Pasitigris the 10th of February, the interval is forty-seven<sup>76</sup> days; and then the number of miles, divided by the number of the days, gives nearly fourteen miles a-day for the march of the army. This rate is evidently too high<sup>77</sup>, because it makes no allowance for the time Alexander staid at Phasa-gardæ and Persépolis, where he had business to transact, or for the necessary<sup>78</sup> halts of the army; but we are to consider that Nearchus staid at the village till he heard of the approach of the troops, and, therefore, any interval that will coincide with their arrival may be assigned to his delay. Fourteen days will answer every purpose that is requisite; and if we bring Alexander to the bridge on the Pasitigris upon the twenty-fourth of February, we have at least a consistent date, if not the true one; and as no real day is assigned in any author<sup>79</sup> that is now extant, this is the only kind of precision that can be expected.

This bridge on the Pasitigris is described as a bridge of boats,

<sup>76</sup> Forty-eight inclusive.

<sup>77</sup> A Macedonian army, upon occasion, marched from twenty to twenty-five miles a-day; but the marches of the ten thousand reduced, amount to thirteen or fourteen miles; and this is a fair estimation for the march of a Macedonian army, when no particular object was in view. Alexander was twenty days in marching from Babylon to Susa, three hundred miles; forty days consequently give six hundred miles; but he then moved to seize the treasure: he had now no particular object in view.

Tippoo Sultan's army marched four cosces

a-day, 16 miles. Lord Cornwallis, when moving towards Seringapatam, marched about ten miles a-day. Lord Lake, in 1804, near Dehli, advanced his horse 70, which is as much as the Mahratta or Abdallee horse ever performed.

<sup>78</sup> *Triduo ambulat exercitus, quarto requiescit die*, was the Roman practice. St. Ambrose, *Serm.* 5. in *Psalm.* 118. This is not very different from modern practice. The British army on a march halts on Thursday and Sunday.

<sup>79</sup> Pliny says seven months.

which had been thrown over the river for the accommodation of the troops; but as bridges of this kind are the ordinary means of communication throughout the empire, and the route was by the common road from Persis, it is reasonable to suppose that there was always a bridge nearly in the same place. Neither ought I to omit a circumstance accidentally preserved in Diodorus, which at the same time indicates the necessity of a bridge, and the possibility of navigating the Pasitigris: for this river, he informs us, was from three to four stadia broad, and its depth correspondent.

To this bridge I conduct Alexander; and hither, upon hearing of his approach, Nearchus proceeded from the village, up the stream, to join him. No space of time is allotted by the journal for this navigation; but as the passage could not be less than from ninety to an hundred miles, it would scarcely require less than three days, and possibly more, notwithstanding they might have the advantage of the tide at the commencement of their progress. The fleet seems to have reached its destination before<sup>100</sup> the army; but no sooner did Alexander arrive, than he embraced Nearchus with the affection of a friend, and the acknowledgments of a sovereign. One object of his ambition was to conquer difficulties unattempted by others, and one aim of his policy was to obtain a knowledge of his empire; both these purposes were effected by the accomplishment of this expedition; his satisfaction was complete. The reception of Nearchus among his countrymen was as honourable as that which he experienced from the king; wherever he appeared in the camp,

<sup>100</sup> Πρὸς τῇ χειρὶ ἐμψύχωντες ἰφ' ἣ τὸ γένειμα διαβιβάσων ΕΜΕΛΑΕΝ Ἀλέξανδρος εἰς Σόον. Arr. p. 358.

he was saluted with acclamations ; while gratitude and admiration united in weaving the wreath and the chaplet to crown him for his success. Sacrifices, games, and universal festivity, closed the scene of this happy union. Thus have I conducted the several divisions of the forces and the fleet from Nicêa on the Indus, to the termination of their labours in Susiana ; and I conclude the expedition on the twenty-fourth of February, in the year three hundred and twenty-five before the Christian era.

The time employed in accomplishing this voyage from the mouth of the Indus is an hundred and forty-six days, or somewhat short of five<sup>321</sup> months, which Pliny<sup>322</sup> has extended to seven<sup>323</sup>, and in which he is neither consistent with the departure from Nicêa, or from the mouth of the Indus. A modern vessel, it is true, may perform the same course in three weeks which employed Nearchus twenty-one ; but we are not for that reason to undervalue the merit of the first attempt. Within the memory of man, a voyage to India required eight or nine months ; but Dr. Robertson<sup>324</sup> mentions, that, in the year one thousand seven hundred and eighty-eight, the Boddam East Indiaman reached Madras in an hundred and eight days, and it has since been performed in ninety-six.

Here the narrative ought to close ; but I trust the reader will have no objection to accompany Nearchus to Susa, where he is to receive the reward of his labours. To Susa, after crossing the

<sup>321</sup> Five *lunar* months and six days.

<sup>322</sup> Pliny says, in fact, that it was the third month of the navigation, but the seventh from the time that Alexander had parted with them

at Pattala. Neither his date of Alexander's departure or of the voyage is just.

<sup>323</sup> Lib. vi. p. 136.

<sup>324</sup> *Disquis. Ind.* p. 207.

Pasitigris, Alexander proceeded with all his forces, and in that capital, where the principal treasure of the empire was deposited, he prepared to distribute those remunerations which had been earned by the faithful services of his army, and those honours which are due to merits of distinction.

The first instance of his liberality was exhibited in discharging<sup>56</sup> the debts of the army, which are estimated, not perhaps without exaggeration, at twenty thousand talents, equal to three millions eight hundred and seventy-five thousand pounds sterling; an enormous sum! But if we suppose the Macedonians alone to partake of this favour, and estimate them at forty thousand<sup>57</sup>, it amounts to less than an hundred<sup>58</sup> pounds a man; we must observe, moreover, that the debts of the officers were included in this estimate, and the excess of their proportion must subtract from the quota of the private soldier. Many<sup>59</sup> of them had lived with the luxury of Oriental<sup>60</sup> satraps, and possibly Antígenes was not the only one who gave in his debts above their real amount. If, therefore, proper deduction be made on these several accounts, the proportion to the individual will not appear so extravagant as the gross sum.

A second scene of magnificence was presented upon the marriage of Alexander, and that of his principal officers, who were induced by his example, or influenced by his favour, to receive

<sup>56</sup> Diodorus places this transaction at the time of dismissing the veterans, mentions their debts only, and estimates them at ten thousand talents. Vol. ii. p. 246.

<sup>57</sup> Notwithstanding the reduction by war, infirmity, and the march through Gadrósia, it may be calculated, from the reinforcements

which had joined, and the services of the army immediately upon the death of Alexander, that the number was greater rather than less.

<sup>58</sup> Ninety-seven pounds, all but a fraction.

<sup>59</sup> Plutarch in Alexandro, p. 703. sub fine.

<sup>60</sup> See Athenæus, lib. xii. p. 539.

the daughters of the noblest Persian families at his hands. Alexander himself had before married Roxána, the daughter of Oxyartes, satrap of Bactria; and he now gave his hand to Barsínè<sup>590</sup>, the daughter of Darius; to whom Aristobólus adds a third, who was Parysátis, the daughter of Ochus. Eighty marriages of this sort were celebrated in the same nuptial feast; and among the number was that of Nearchus, with the daughter of Mentor and Barsínè. The king bore the whole expence of the solemnity, and furnished the marriage portion<sup>591</sup> for every bride.

Next succeeded the distribution of honours, and the reward of services. All the officers, who had obtained the rank of Guards of the Royal Person, received crowns of gold, including Leonnátus for his victory over the Orítæ, and Peucestas for his service in preserving the life of his sovereign. In this honour Nearchus alone<sup>592</sup> partook as admiral, and Onesícritus as the navigator of the fleet. Nearchus was likewise continued in his command, and destined to a future service of greater importance than the voyage he had already performed, that is, the circumnavigation of Arabia to the Red Sea. This was intended as the completion of the great design that Alexander had conceived of opening the communication between India and Egypt, and by means of Egypt with Europe: of this commerce, Alexandria was to be the centre. Such, by the natural course of events, it afterwards became, and such it continued for eighteen centuries; but this plan was defeated by the unexpected death of the

<sup>590</sup> Statira.

<sup>591</sup> Προίχα, 10,500 talents. Athenæus.

<sup>592</sup> At least no others are mentioned by name.



monarch; and the fate of Nearchus in the ensuing struggle for empire is no farther discoverable, than that he was made governor of Lycia<sup>393</sup> and Pamphylia<sup>394</sup>, and that he attached himself to the fortunes of Antigonus. We find him with that general crossing the mountains of Louristan<sup>395</sup>, out of Susiana, after his contest with Eúmenes, and two years afterwards as one of the advisers<sup>396</sup> Antigonus had given to his son Demétrius, whom he left in Syria. I have looked for the conclusion<sup>397</sup> of his life in vain<sup>398</sup>; but this event possibly took place at the battle of Ipsus, where Antigonus fell; or, after the battle<sup>399</sup>, by the command of the four kings who obtained the victory. In whatever manner he closed the scene of life, and by whatever means he was prevented from completing his voyage into the Red Sea, that part of it which he had performed must be the monument of his glory.

<sup>393</sup> The first mention of Nearchus, as governor of Lycia and Pamphylia, occurs in Justin. This, however, does not greatly interfere with the divisions of the empire given in Photius, p. 230; for both these provinces are assigned to Antigonus; and Nearchus, as being high in his favour and confidence, was probably appointed by him to these provinces. It is remarkable, that in Photius's extract from the ten books of Arrian, (τὰ μὲν Ἀλξάνδρου,) concerning the transactions after the death of Alexander, the name of Nearchus is not once mentioned.

<sup>394</sup> Justin, lib. xiii. cap. 4. Orosius, lib. iii. c. ult. See Q. Curtius, Snakenborck: *Divisio Imperii*.

<sup>395</sup> Diodor. lib. xix. p. 333.

<sup>396</sup> Diodor. lib. xix. p. 372. ed. Wes.

<sup>397</sup> Demetrius was left by his father to de-

fend Gaza in Palestine against Ptolemy. He was defeated by Ptolemy. Might not Nearchus perish here? See Appian Syr. p. 616. Ed. Schweig.

<sup>398</sup> I dare not pronounce that nothing is to be found relating to Nearchus after the battle of Ipsus, but I have searched Diodorus, Plutarch, Arrian in the extracts of Photius, Justin, Q. Curtius, and the indefatigable commentators of that author, Freinshem and Snakenborck, without success. Philostratus, lib. iii. de Vita Apoll. c. 15. p. 155. says, Nearchus was buried at Pátala. How did he get there? See Plutarch in Vita Alex. p. 669, edit. Franckfort, 1599.

<sup>399</sup> This battle ought to have been found in the 21st book of Diodorus, but the extract only is extant.

His best encomium is comprised by his historian in a single sentence. Thus was the fleet of Alexander conducted in SAFETY from the Indus to its destination.

ΟΥΤΩ ΜΕΝ ΑΠΕΣΩΘΗ ΑΛΕΞΑΝΔΡΩ, ΕΚ ΤΟΥ ΙΝΔΟΥ ΤΩΝ  
ΕΚΒΟΛΕΩΝ ΟΡΜΗΘΕΙΣ Ο ΣΤΡΑΤΟΣ.



S E Q U E L  
TO THE  
*VOYAGE OF NEARCHUS.*

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THE military character of Alexander dazzles the mind so powerfully with its splendour, that it is not without an effort the attention is directed to the plans of his policy, and the arrangement of his empire. To excite this attention has been the endeavour of the preceding pages; and, if the subsequent narrative contributes to the same design, it will be no uninteresting appendage to the work.

Having conducted the united forces of the Macedonians to Susa, in the latter end of February 325 A. C. we may allot something more than a month to the transactions which took place in that capital, and fix the time for the departure of the army at the beginning of April.

The main<sup>1</sup> body of the troops was put under the command of Hephêstion, with orders to proceed towards<sup>2</sup> the Tigris; but Alexander himself determined to take a view of the Gulph of Persia; and, for that purpose, embarked on board the fleet

<sup>1</sup> Arrian, lib. vii. p. 281.

it will immediately appear that Alexander met

<sup>2</sup> Arrian says, to the Gulph of Persia; but them again on the Tigris.

with the Hypaspists<sup>3</sup>, the first<sup>4</sup> troop of horse, and a small body of the Companions<sup>5</sup>. He embarked, says Arrian, on the Eulêus; and, if this be true, the fleet must have been brought down the Pasitigris to the junction of that river with the Eulêus, and from that junction up the Eulêus, towards Susa. This supposition is authorized by Arrian; and, if it is allowed, solves an apparent difficulty; for Alexander undoubtedly fell down the Eulêus, and probably from the bridge on that river noticed by Strabo. The annexed map will render this more perspicuous than any explanation which can be added, but the cause of variation in the names requires some notice.

It has been observed already, that Nearchus entered that channel which he calls the Pasi [or eastern] Tigris; and having entered that river, he pursued his course up it to the bridge; but the stream which leads on the west to Susa is the Eulêus, and the other on the east preserves its title to Pasitigris<sup>6</sup>. Nearchus navigated this eastern branch; but Alexander, on his descent from Susa, embarked on the Eulêus, and never entered the Pasitigris at all.

Down this stream, the fleet descended to the head of the Delta; and here a new arrangement was made: the vessels which had suffered most in the voyage, were ordered to proceed, with the troops they had on board, through the Haffar<sup>7</sup>

<sup>3</sup> N. B. The Hypaspists alone are three thousand. Arrian apud Photium, p. 610. Diod. lib. xviii. and xix. p. 339; but the *Agriaspides* are mentioned separately.

The Hypaspists are Macedonian infantry, in contradistinction to the Greek *Hoplites*, foot heavy-armed.

<sup>4</sup> *ἡ πρώτη*.

<sup>5</sup> Companions. *ἑταῖροι*. Macedonian horse.

<sup>6</sup> In Strabo, Diodorus, and Q. Curtius, as well as Arrian.

<sup>7</sup> D'Arville conjectures Haffar may be the *Aphlè* of Pliny. May they not both be the *Ampè* of Herod. lib. vi. p. 447. edit. Wes.; the situation of Herodotus's *Ampè*, at the mouth of the Tigris, is more precise than Pliny's *Aphlè*?

canal into the Tigris; and it is remarkable that Arrian mentions it expressly, not as a natural stream, but an artificial<sup>9</sup> cut. What can precision require more? It is not my intention in this Sequel to dwell minutely upon particulars; but I cannot help observing some circumstances respecting this canal, as they exist at the present hour. The eastern entrance of it is guarded by a fort, with two others at its issue into the Tigris. The lower one of these is in the Delta, and that part of the Delta called the Mesène, on the site of which we ought to look for the Spasini<sup>10</sup> Charax, as the most convenient spot: but if it cannot be found there, it is possibly still discoverable<sup>11</sup>, for it was a mound of earth collected from the neighbourhood, which, upon a level like the Muçan, is perhaps visible to the present hour. Tumuli of this kind are more eternal than walls of stone.

Alexander, after dispatching the greater part of his fleet by this passage, proceeded with the lightest and best sailing vessels down the Eulêus to the bay at Kataderbis, and hence round the Delta to the mouth of the Tigris or Shat-el-Arab. But of this passage we have no distinct account, except the mention of that intervening space on the Gulph of Persia which Nearchus had navigated twice before. The narrative, in fact, is so brief, that it employs only four lines to conduct him into the Tigris, to convey him up to the camp of Hephêstion, and from the camp to Opis, where the expedition closes.

<sup>9</sup> αἱ δὲ ἄλλαι ἀντὶ τῆς ἀνακομισθεῖσαι κατὰ τὸν Εὐλάιον ἔς' ἐπὶ ΔΙΟΡΥΧΑ ἢ ΤΕΤΜΗΤΑΙ ἐκ τοῦ Τίγερτος εἰς τὸν Εὐλάιον, ταύτη διανομήσθων εἰς τὸν Τίγερτα.

<sup>10</sup> Josephus Antiq. l. xx. cap. 2. mentions Abennerigus a sovereign, who resided in Spasina. The name seems Arabic, and I should think an Arab in possession of that fort and

country was like Soleyman Sheik of the Kiab in modern times. Lardner Cred. i. 115. Josephus has Σπασινὸς χάρακα.

<sup>11</sup> What perpetual inundation may have done is not to be calculated; otherwise, if this site were searched for, it would indubitably be found.

Concerning the navigation of the Tigris little can be added from modern information; the passage between Basra and Bagdat, we learn from Hackluit, requires forty-four "days against the stream, with fourteen men to draw the boat; and, from Bagdat downwards, may be performed in nine, eighteen, or twenty-eight days, according to the state of the river. Otter", who performed this voyage himself, has few materials "to supply; he embarked in June", when the river ought to be full; and he mentions little, but that he found no cultivation between Bagdat and Al-Modain, and that he saw at Amara the mountains which bound Susiána on the north, beginning to rise at some distance on his left. He notices besides a canal from Amara "to the Euphrátes, which forms a Dgesiré, or island, inhabited by the Arabs Beni Lamé. To this barren account Colonel Campbell" adds, that the river itself is grand, but the country furnishes scarcely an object for reflexion. "I do not "remember (he says) to have ever passed through such a vast

" Hackluit, vol. ii. p. 243. 251. 270. Sometimes sixty days, as Tavernier and P. della Vallé assert.

" Tom. ii. p. 39. et seq.

" The Tigris swells from the vernal rains, and does not continue full so long as the Euphrates. Irwin went down in April (21st), and seems to say the swell was past; but it rises and falls during the whole of the early part of the year, according to Niebuhr. Irwin, 336.

Irwin, vol. ii. p. 349. goes down the Tigris. He gives more names, but chiefly of Arab villages. He notices also more derivations of the stream, natural or artificial; and confirms the account of Otter, in regard to the mountains (which he calls Hamerine) on the east, never reaching the river, but below

Amara approach within three leagues of it. P. 359.

" June 10th, at Bagdat. June 14th, at Amara. June 17th, at Khorna. June 18th, at Basra. Nine days, agreeable to Hackluit.

" Irwin, p. 367. adds, that a river called Besbosva (perhaps Basbooch) falls into the Tigris from the Hamerine mountains below Amara, and 97 miles above Korna, including the windings of the channel. If true, this ought to be a branch of the Guuedhi; but the estimate may be as much in excess as his calculation of the course of the river from Bagdat to Khorna. This distance he states at 505 miles, which is only 280 in d'Anville.

" Journey of Donald Campbell, Esq. 1795. Part iii. p. 10.

“ extent of country, so uniformly dull and uninteresting, or to  
 “ have spent eight or ten days with so little to give birth to a  
 “ new idea ”.”

Alexander, at the season he navigated this stream, probably employed as many days as are now requisite ; so that he could hardly reach Opis, which is above Bagdat, till the middle of June, more especially as he had the dykes to remove, with which the Persian monarchs had obstructed the stream. His historians delight in attributing these obstructions to the timidity of the Persians, and the removal of them to the magnanimity of the Conqueror ; but Niebuhr<sup>17</sup>, who found similar dykes<sup>18</sup> both in the Euphrates and Tigris still existing, observes, that they are constructed for the purpose of keeping up the waters to inundate the contiguous level ; if so, the demolition is as derogatory from the policy and sagacity of the monarch, as it is flattering to his intrepidity.

Opis was the principal city on the Tigris, in the age of Xénophon and Alexander ; it rose probably on the decline of Ninivè, and the other Assyrian cities after the Persian conquest, most of which Xénophon found in a state of decay and desolation ; but the situation of Opis<sup>19</sup> is much doubted by geographers. There is no apparent reason indeed why the position assigned to it by d’Anville should not be admitted ; but having examined the question for my own satisfaction, I have subjoined the result

<sup>17</sup> He notices the heat as intolerable.

<sup>18</sup> This is mentioned at Lemloun, on the Euphrates ; at Higré, Hogknè, and Eski Mosul, on the Tigris. Niebuhr, vol. ii. p. 307. Edit. Amst. Travels. He supposes the mound at Higré to be in the very place of that demolished by Alexander.

<sup>19</sup> Tavernier mentions one of these dykes

one hundred and twenty feet high in the fall, between Mosul and the great Zab. Vol. i. p. 227.

<sup>20</sup> In hoc Chaldæorum tractu fuit Opis, emporium ad Tigrim, sed incertum quo loco et ordine respectu oppidorum a Ptolemæo memoratorum. Cellarius, vol. ii. p. 462.



of my inquiries for such readers as may find a pleasure in geographical discussion.

After conducting Alexander to Opis about the middle of June, the military transactions which succeeded are foreign to the purpose of the present work. It will be sufficient barely to mention the mutiny of the army which took place at this city, and the discharge of the veteran soldiers, who were sent home under the command of Cráterus. The latter end of the summer was employed in an excursion into Media; and at Ecbátana, the capital of that province, the death of Hephéstion was the principal circumstance which occurred. Paroxysms of grief occupied the Conqueror during the autumn; in the indulgence of which, like another Achilles, he dishonoured himself, while he intended to honour the memory of his Patroclus. Upon the commencement of winter, he is said to have resumed his arms in order to sooth his sorrow; and the conquest of the Kossæi was completed in forty days. They are the same tribe still called Kouz<sup>21</sup>, or Cosses, inhabiting the mountains of Louristan; and, by the invasion of them from the north, ought to be on the northern<sup>22</sup> face of that range which incloses Susiana. Upon the conclusion of this expedition, Alexander returned towards Mesopotámia, with an intention of proceeding to Babylon; and, upon this march, we are again informed of a renewed attention to his marine: for Heraclides was now sent into Hyrcania [Mazanderan], with orders to cut timber and prepare a fleet of vessels built after the Grecian manner, for the purpose of exploring the Caspian<sup>23</sup> Sea. It seems extraordinary, that in

<sup>21</sup> Plutarch writes this name Κωσσαι, Kossæi; and hence Kyssii. Alexander, p. 704.

<sup>22</sup> As the Uxii are on the southern. Ἰθρος ἀπὸ τοῦ ὄρους. Arr. lib. vii. p. 294.

<sup>23</sup> It is remarkable that Nadir Shah was building a fleet on the Caspian, and forming one on the Gulph of Persia, a few months before his death, as well as Alexander. The

the age of Alexander it was still doubted whether this sea was a vast lake, or communicated with the Northern Ocean; but the information of Heródotus, as it appears, had not been sufficient to convince the Greeks of its real state. The solution of this doubt was motive enough to influence the conduct of Alexander; and the desire of obtaining a knowledge of his own empire, or the situation of the nations on his confines, had always been an inducement to the boldest of his undertakings.

After crossing the Tigris, he proceeded to Babylon<sup>24</sup>, and entered the city much against<sup>25</sup> the inclination of the priests of Bélus. They had embezzled the revenues allotted for the restoration of the temple<sup>26</sup> demolished by Xerxes, and wished to avoid the day of account. The situation of Babylon is too well known to require much disquisition on the subject: it stood twenty<sup>27</sup> miles above the modern Hilleh, the town where all travellers land who come up the Euphrátes from Basra, and whence they have a journey of only three or four<sup>28</sup> days<sup>29</sup> across

transporting of timber and vessels into the provinces which were not supplied with either is likewise noticed by Hanway, Otter, and Sir William Jones, &c.

<sup>24</sup> Babylon is four German miles from Hilleh. Niebuhr, p. 235. The Euphrates, at Hilleh, is four hundred yards wide, with a bridge of thirty-two boats, p. 234.

<sup>25</sup> Omens occur as usual, and Nearchus is mentioned by Plutarch as the officer who came out to meet the king, and forewarn him of his danger.

<sup>26</sup> It was not the temple or tomb of Belus, according to Strabo, but a pyramid of brick, a stadium in height, and a stadium square at its base. Ten thousand men were employed for two months, but the death of the king put

a stop to the progress of the work. Lib. xvi. p. 738.

<sup>27</sup> Mr. Jones says, twelve miles.

<sup>28</sup> Mr. H. Jones writes,—The following distance, which I conceive correct, (for I have travelled it many times and in different ways,) is taken from a manuscript journal of my own.

	Miles.
Hillah to Caravanserai Mahoud,	10
Mahoud to ditto Naja Soliman,	8
Naja Soliman to ditto Scanderca,	9
Scanderca to ditto Beeranoos,	10
Beeranoos to ditto Asad,	10
Asad to ditto Kia Pacha,	8
Kia Pacha to Bagdad,	10
	65

<sup>29</sup> It is little more than fifty miles. Ives.

Mesopotamia to Bagdat. The remains of this capital are not so obliterated as some travellers would make us believe; they are, however, mountains of rubbish<sup>20</sup> rather than ruins, with caverns and hollow ground extending over a space of fifteen or sixteen miles; while there is hardly a town, a village, or a building within many leagues of its neighbourhood, which does not exhibit the bricks plundered<sup>21</sup> from this once magnificent<sup>22</sup> metropolis of the East.

At Babylon, Alexander found part of his fleet, which had proceeded up the Euphrates while he was conducting the other part up the Tigris; and, by the language of Arrian, it should appear that Nearchus<sup>23</sup> had taken charge of this division.

The boat which carries dispatches is only ten days between Basra and Hilleh. The ordinary passage about twenty-one days. Niebuhr, *Voyage*, vol. ii. p. 197, et seq. The tide serves to Ardsje, seventy miles above Khorna, p. 198. *i. e.* fourteen German miles.

<sup>20</sup> Niebuhr trod the ground of Babylon almost without knowing it; he mentions hollow tumuli for three or four miles, and some trees still growing there not natives of Babylonia; vol. ii. p. 235, 236. Hilleh is in lat. 32° 28' 30". Babylon near twenty miles to the north. See P. della Vallé, tom. ii. p. 250. Hilleh is fifty miles from Bagdat by common estimation, but I find it by a combination of routes fifty-five, in the late Mr. Howe's papers, communicated to me by the Bishop of Rochester.

<sup>21</sup> A Caravanserai at Hilleh was built within these few years with bricks from Babylon, about the thickness of ours, but a foot square, and very well baked. Niebuhr, p. 235. The reason why there are so few remains of Babylon, is, that the ordinary buildings consisted of bricks baked in the sun. The bricks of the walls and public buildings have been conveyed to other towns.

<sup>22</sup> The town of Hillah itself is nearly built with materials brought from these ruins: and when I was there, on my way to the Bacha's court at Bagdad, I lodged at the house of one of the principal people of the town. My landlord was making a new Ser-daub, that is to say, summer room, under ground. I observed the bricks with which it was to be paved to be of an uncommon size; and on inquiry I found them to have been brought from Babylon. Each brick was about three inches thick, and a foot and an half square. There was adhering to the sides of many of them an apparently bituminous cement, and in the middle an impressed scroll or label, apparently, from the evenness of the lines, containing a distich; the characters of which appeared to me to resemble a mixture of characters on Persepolis and the modern Hebrew ones. The ruins of Babylon, as I can testify, exist more perfect than are generally supposed. Mr. H. Jones.

<sup>23</sup> Κατίλας δὲ ἐν Βαβυλῶνι τὸ παντικὸν τὸ μὲν κατὰ τὸν Ἐυφράτη ποταμὸν ἀναπικτικὸς ἀπὸ θαλάσσης τῆς Περσικῆς ὅ, τι περὶ τὸν Νιάρχον ἦν. Arr. lib. vii. p. 299. This does not amount to proof.

Hither also had been brought from Phœnicia seven-and-forty vessels, which had been taken to pieces, and so conveyed overland to Thapsacus. Two of these were of five banks, three of four, twelve of three, and thirty rowed with fifteen oars on a side. Others likewise were ordered to be built upon the spot, of cypress, the only wood which Babylonia afforded; while mariners were collected from Phœnicia, and a dock was directed to be cut, capable of containing a thousand vessels, with buildings and arsenals in proportion to the establishment. To effect this design, Mikkalus had been sent down to Phœnicia with five<sup>34</sup> hundred talents, and a commission to take all mariners into pay, or to buy slaves who had been trained to the oar.

Extensive as these preparations may seem, they were not too large for the designs of Alexander; he had conceived the idea of conquering Arabia<sup>35</sup>, and colonising both sides of the Persian

<sup>34</sup> One hundred and six thousand eight hundred and thirty pounds.

<sup>35</sup> An immense country without cities, property, or cultivation, deserts without water, and an enemy always flying and hovering at the same time, render the conquest of Arabia almost impracticable: but their armies are not formidable in the field; the feuds of their tribes, all independent by nature and habit, prevent coalition: and no point of union has yet been found, either in ancient times or modern, sufficient to bring a numerous body to act in concert, except during the warmth of Mahomedism, and in the three or four first centuries after its propagation. Weak as the Turkish government is, the Pashas of Bagdat, Basra, Aleppo, &c. if soldiers, never hesitate to meet them in the field, or, if politicians, never fail to divide tribe from tribe, or family

from family. The celebrated Ahmed, Pasha of Bagdat, employed arms, money, or treachery, as best suited the moment, and was master of all the Arabs round his Pashalic. Whether Yemen, which has both cities and cultivation, is exempt from conquest, is still problematical. The Abyssinians succeeded; Elius Gallus was repulsed.

See Ludovico de Barthema Ramusio, vol. i. p. 150. where he says, sixty Mammelucs were a match for forty or fifty thousand Arabs.

Tanta è la viltà degli animi loro.

Li detti Arabi sono huomini molto piccoli & de color Leonnatq scuro & hanno la voce femminile, p. 149.

And afterwards, p. 153, 4000 Abyssinians are of more value to the sultan of Rhada than 80,000 Arabs.

Gulph. The conquest, perhaps, might have been as precarious as all other attempts which have been made against that singular nation ; but a fleet on the Euphrátes in the summer, while the stream <sup>26</sup> is full, and another on the gulph, might have restrained the piracies and incursions of their plundering tribes ; and in the field they have never been formidable, except during the short period that fanaticism enabled them to act in concert.

It <sup>27</sup> was either with a view to this expedition <sup>28</sup>, or, as the historians rather intimate, with a design of re-establishing the canals, and benefiting the country by irrigation, that he now undertook a voyage down the Euphrátes to Pallácopas. A voyage not without its difficulties ; but they are such as the researches of d'Anville, and the visit paid by Niebuhr to the spot, enable us to remove. In the neighbourhood of Babylon, there are still the remains of two lakes, more celebrated by the names of Ali and his son Hosein than by any appellation of their own. The

<sup>26</sup> Gallies of five banks of oars, such as those just mentioned, could never have been employed on the Euphrátes. They might have been floated down during the increase of the river, but must have been intended for service either in the gulph, or to attend the army on the proposed expedition to Arabia. They could hardly have been useful to Nearchus, in his circumnavigation to the Red Sea.

<sup>27</sup> Gronovius, in a very long and angry dissertation, defends the sense which Vulcanius has given to this passage of Arrian, in opposition to the perversion of it by Isaac Vossius ; and Vossius seems to deserve every reproof, short of the scurrility of his antagonist. The criticism of Gronovius on the word ἀπαρροφή, in which he proves it to mean the turning of

the water back again from the canal into the channel of the river, removes all the real obscurity which enveloped this passage. The dissertation accompanies Gronovius's edition of Arrian.

Polybius uses ἐκτροπή for a digression, or rather the point where the digression commences. See lib. iv. cap. 21. in fine & passim. αὐθι; ἐπὶ τῇ ἐκτροπῇ ἐκείνῃ.

<sup>28</sup> Gronovius, with great vehemence, rejects all consideration of Arabia, or Arabians, from the account ; but there is some intimation in Arrian, that the city built by Alexander near the lake had a respect to this nation ; and Strabo, p. 741, mentions it in express terms. Strabo does not notice Pallácopas, but only the voyage and the clearing of the fosses.

upper lake lies nearly on the parallel of Babylon; and at its northern extremity stands the town of Kerbelai<sup>39</sup>, containing Meschid Hosein<sup>40</sup>, or the tomb of Hosein<sup>41</sup>, grandson of Ma-

<sup>39</sup> Hosein was killed at Kerbelai. The beautiful Arabian narrative of his death in Ockley almost makes amends for the deficiency of historic matter in this and almost every other Oriental work. See Ockley, vol. ii. p. 210, et seq. Meschid means the tomb of Ali, Hosein, &c.

It is the death of Hosein which gave rise to one of the most celebrated fasts of the Persians, and the murder of this family, which makes the distinction between the Schiites and Sonnites, the two great sects of Mahomedism. The Persians curse Omar, Abubecr, Othman, and Ommawiah. Nadir Shah, notwithstanding his attempt to introduce the Sonnite tenets into Persia, adorned these two Meschids of the Schiites at the expence (as Niebuhr says) of 66,666 German crowns for the roof only of Meschid Ali, and 13,333 for the service of Meschid Hosein; and yet neither of these Meschids is in his own kingdom, but both under the Turkish government. See Niebuhr, vol. ii. p. 206. Amst. edit.

<sup>40</sup> Kerbela is a very populous city, owing to the desolation of Persia by Nadir. Abdul Khurreem, p. 121. The canal opened again of late years, and trade revived, by Hassan Pasha of Bagdat, at 20,000l. expence. Description of the tomb or Meschid.

From Kerbela to Nejeff (whence Bahr Nejeff), - - - 16 farsangs.

to Huhleh = Hillah, 7

to Zulkefet, - - 5

to Nejeff, - - - 4

Nejeff not so populous as Kerbela, on account of its distance from the river infested by Arabs. While Abdul Khurreem was here, Nadir sent his Zirgir Bashy to cover the Meschid at Kerbela and Nejeff with gold: the gold was of considerable thickness.

A canal undertaken from Nejeff to the Euphrates, three farsangs finished, but stopped by Nadir's death. A proof that neither lake or Pallacopas exist at present.

The length of the canal would have been thirty-five farsangs; and it was intended that those parts of the banks which were rocky should have been strengthened with stone and mortar, and where the soil was sandy, with copper and lead. Nejeff was a dependency of Kufa. Nothing magnificent remains at Kufa but the mosque where Ali received his wound. The Meschid is a farsang from it. The mosque has been an ancient temple; the west wall, now made bare by the weather, shews figures cut in stone. The others are of modern construction. Abdul Khurreem, pp. 126, et seq.

Kufa and Modain were exhausted by the building of Bagdat. Id.

<sup>41</sup> Meschid Hosein, or Kerbelai, is five German miles from Hillah, and five from Moschid Ali. Niebuhr, vol. ii. p. 217. The canal from the Euphrates is still preserved. Both these Meschids have been plundered by the Wahabites.

Meschid Ali is at Hira, (d'Anville Geog. Anc. tom. ii. p. 259.) and Hira is an ancient abode of Arabs in Irak or Persia. It is the first place beyond the limits of Arabia occupied by the Moslems, under Abubecr's khalifate. Abul Pharaj, p. 109.

Hira is the seat of an Arab tribe, under an emir called Al-Mondar, the Almundarus of Procopius and the Byzantine historians. This Al-mondar was supported by the Persian empire, as the sovereigns of Petra by the Romans; and war between the two empires often commenced by the excursion of these Arabs on either side.

homet. From the southern extremity of this lake to the northern point of the lower, or Bahr Nedsjef, the distance is about five-and-twenty miles, with Meschid Ali a little to the east. Kufa, where Ali was murdered, is not more than six miles from this spot. It stood in a south-east direction between Bahr Nedsjef and the Euphrâtes; but is now totally ruined\*, and without inhabitants. It is this lower lake into which the Euphrâtes was diverted by the cut at Pallâcopas, in the season of its inundation; and the opening or closing of this canal was committed to the satrap of Babylon, as a part of his office. In a tract like that on both sides of the Euphrâtes, where all is desert that cannot be watered, and every spot is fertile that can be flooded or drained at the proper season, this office must have ever been of the highest importance. While Babylon was the capital of the East, the controul of the waters invigorated all the contiguous districts; but when the Persian conquerors dwelt on the other side of the Tigris, at Ecbâtana, Susa, or Persépolis, as the due attention was discontinued, Mesopotâmia, Chaldéa, and the capital declined together. The Parthian dynasty encouraged the increase of a desert between their own and the Roman frontier, and, in the latter vicissitudes of power, despotism and neglect have completed what policy might have commenced. Still it happened in every age, and under every government, that the neglect was not universal: the grand canals, it is true, have failed; but a partial distribution of the waters has constantly been preserved; and, even under the de-

\* Niebuhr mentions a dry canal at Kufâ, it. Niebuhr himself calls it Pallacopas, vol. ii. (Dsjarre Zaade,) which would answer very well to the cut of Pallacopas, as I wish to fix p. 183.

solating empire of the 'Turks, is to this hour an object of comparative <sup>43</sup> importance.

If Alexander, then, had fixed upon Babylon for the future capital of his empire, (and here the sovereigns of the East ever ought to have fixed, if they had not rather wished to shrink from their European frontier, than to maintain it,) the first step necessary was to restore the country round it to the state it had enjoyed in its primitive splendour under the Babylonian monarchy. This had been effected by managing the superfluous waters of the Euphrates, by withholding them at one season and dispensing them at another, and by making the abundance of the summer subservient to the deficiency of the winter.

To these views we may attribute the expedition to Pallácopas, which was a canal issuing into a lake or marsh on the Arabian side of the river, fifty miles below Babylon. This lake is the Bahr Nedsjef of Niebuhr, the Rahemah <sup>44</sup> of d'Anville; it is now dry, in the winter season at least wholly, for Niebuhr <sup>45</sup> seems almost to have passed through the centre of it, and found nothing like a lake, though several cuts and channels now totally neglected <sup>46</sup>: if the water ever enters them at the height of the

<sup>43</sup> While Ives was on his passage up, he met a Pasha coming down, with commission to direct the places where the bank was to be opened, or the outlets closed, p. 255. This is still an office of dignity, for this Pasha was a commander of 30,000 men; and as we may conclude that under the Turkish government, every drop of water is paid for, though the service will be performed badly, it will still be performed.

<sup>44</sup> See Capper, p. 212. Birket Rahamah. What is Birket? Birk is a well. If the traveller had given us this, we might have judged whether it is yet a lake or dry.

Query, whether it is not an error of the press for Bahr-el-Rahama, the sea of Rahama, or Birk-el-Rahama, like Birk-el-Hadji in Egypt, the lake of the pilgrims, *i. e.* where they assemble for the pilgrimage.

<sup>45</sup> Niebuhr landed at Mäschwira, on the western bank, a little above Lemloon, and went by land to Meschid Ali. He must either have gone along the bed of the sea, or have seen it, if it existed. He was here in December. Vol. ii. p. 183. P. 209, he says, the lake was dry. Another name he mentions, El-Buheire.

<sup>46</sup> Desjarré Zaade.



increase, it is not from the attention of the government, but from the natural level of the ground, and from the remains of ancient industry, policy, and discernment. Niebuhr is of opinion, that a canal<sup>47</sup> ran parallel with the Euphrates from Hit, above Babylon, through the whole length of the desert, till it issued at the Khore Abdillah into the Gulph of Persia. I have already subscribed to this opinion; and though proof is wanting to identify the continuity of this channel through its whole extent, yet it is hardly possible to follow the march of armies, and the route of travellers in any age, without finding something to confirm this supposition. From a view of the two lakes at Meschid Hosein and Meschid Ali, there is every reason to suppose that there was formerly a communication between them; and from Meschid Ali, or Bahr Nedsjef, to the sea, the existence of the channel is indubitable<sup>48</sup>. One proof of this is still existing, for every traveller passes the great desert between Basra and Aleppo, without encountering the remains of towns<sup>49</sup>, buildings, and traces of habitation<sup>50</sup>. These relics are hardly Arabian, for it is not the country where the Arabs live in towns;

<sup>47</sup> This attention to the canals is justified by Heródotus.

<sup>48</sup> Arrian's testimony is express. *Ἐκ δὲ τῆς, εἰς θάλασσαν κατὰ πολλὰ τε καὶ μάλιστα ἀφανῆς ὁρμῆς ἐκδίδουσι.* Lib. vii. p. 303.

The reason why these mouths were undiscoverable [ἀφανῆς] to Arrian, was, because he had conceived the mouth of the Euphrates to be where we now find the Khore Abdillah; and when we read in Pliny that the stream no longer flowed through this khore into the sea, because the inhabitants of Orchoë had stopped its course, we ought to conclude, that, between the age of Alexander and Pliny, the Arabs of the desert in the neighbourhood of

the Bahr Nedsjef had diverted its waters in the time of the inundation, to irrigate their own lands, and consequently exhausted them instead of permitting them to follow their former course to the Khore Abdillah. If d'Anville's supposition were true, that there was another derivation from the Khore Abdillah to Bahrein, the extent of Niebuhr's canal would be increased to eight hundred miles.

<sup>49</sup> Niebuhr, vol. ii. p. 307.

<sup>50</sup> See *Asiat. Researches*, vol. iv. p. 401. Ruins of a town, Castrohain, Calmay, six days from Aleppo, forty miles from Palmyra, fifty miles from the Euphrates. See Capper's *Route*, passim.

they are probably Chaldæan, Syrian, or Macedonian, they must all have possessed water as the primary means of existence, and they have ceased to exist, because the Euphrâtes has ceased to convey to them the means<sup>51</sup> of fertilising the desert.

At what period we are to fix the failure of water in the two lakes is uncertain; neither have I hitherto found the means of investigating whether they are yet absolutely dry in summer. There is, however, still an "aquæduct" to Kerbelai, and d'Anville marks two canals running into the Bahr Nedsjef<sup>52</sup>, one at each extremity; the lower one he considers as Pallâcopas, and the distance of fifty miles from Babylon corresponds better with this than that which he calls the Nilus, and brings in at the northern angle; but there is respectable authority to appeal to, that the higher one<sup>53</sup> is more suitable to the circumstances of the navigation; for it is evident that Alexander did not return out of the lake by the same channel that he entered it. Arrian

<sup>51</sup> Some springs or pools may have supported a few scattered villages, and some sources may have maintained a Palmy'ra: but the few waters found in the desert are usually brackish, as the soil is salt.

<sup>52</sup> Just before I left the country, the Nabob of Oude sent large presents to the Bacha of Bagdad, and a considerable sum of money for the purpose of repairing this very canal. Mr. H. Jones.

<sup>53</sup> Mentioned by Niebuhr, and Ockley calls it the river of Kerbelai. Hoscin had been cut off from this water, in order to reduce him by thirst; but he died with arms in his hand, like a true descendant of the prophet. Ockley, vol. ii. p. 222.

<sup>54</sup> There was a town called Nagjaf, where this Meschid was built. Abi'lfeda, Reiske, p. 99.

<sup>55</sup> The canal into the upper part of the lake, d'Anville calls Nilus; it passes by Ebn-Hubeira, and the lake itself sometimes takes that name. This is the Pallâcopas of Niebuhr, and with great reason; for Al-Edrissi says, p. 204, "A castello Ebn-Hobaira profundit sese Eufrates in universam ditionem Kufæ, residuis ejus aquis in lacus influentibus." No character can suit Pallacopas better than this. Mr. Howe's papers.

Nile or Nil is likewise the name of a town on this cut, as appears from Abilfeda, Reiske, p. 318. He says, it lies between Bagdat and Kufa; but as he adds that the cut issues from the Euphrates, and obtained its name from fertilizing the country, like the Nile of Egypt, it is probably the same. Nomen imposuit Al Hagjgijagi Josephi filius, celeber imperator.

mentions, that upon his return he steered his own vessel, with Babylon on his *left*: this cannot be true, if he entered at the bottom, and sailed north; but if we suppose him to enter from the north, to sail southward, and then come out at the lower end, this course brings him very nearly to the marshes of Lem-loon, in which Niebuhr<sup>56</sup> supposes him to be involved, and where all the peculiarities attendant upon his situation naturally take place.

But the immediate object of this expedition was a survey of the canal itself; it seems to have been a work of the Babylonian kings, and to have been neglected by the Persian sovereigns after the Conquest. It had been cut in a part of the bank where the soil was soft, yielding, and oozy; the difficulty, therefore, was enhanced, when the season arrived for closing it, and the satrap of Babylon, whose duty it was, employed thirty thousand men for three months before the stream could be restored to its course, and the mouth of the canal secured. By a survey of the ground it appeared, that at the distance of two miles lower down, the bank was firmer and the soil a rock, if the opening were made here, and a channel carried from this point into the original cut, it appeared easy to effect the stoppage of the waters when requisite, as the solidity<sup>57</sup> of the bank would

<sup>56</sup> Niebuhr, vol. ii. p. 202. Ives, p. 251. Ives himself lost his way in the marsh of Lem-loon, p. 255. The river, he says, still overflows a great way into the desert, p. 252. Banks to confine it, p. 258.

<sup>57</sup> The Euphrates at present, even when swelled by the vernal rains, is, comparatively speaking, a slow stream. The Euphrates is a larger stream than the Tigris. I extract the following, in respect to these rivers, from a manuscript journal of my own.

" Being necessitated the next morning to cross the Euphrates in a ferry boat, the Tartars caused us to be waked at a very early hour; and we fortunately, without any accident, effected the passage across the Euphrates previous to sun-rise. I beg leave to remark to you the following circumstances, in respect to the rivers Tygris and Euphrates. The Tygris at Dearbeker is a stream of near 200 yards breadth, and apparently of a proportionable depth. Be-

hinder the ravages<sup>30</sup> of the inundation in the first instance, and afford a foundation for the works which were to obstruct it, after the increase of the river was passed.

Directions to this purpose Alexander gave on the spot; he then entered the canal, steering his own galley, and continued his survey through the whole extent of the lake. On the Arabian side he ordered a city to be built, which he intended manifestly as a frontier to Babylon in this quarter, or as a place of arms if he should commence his operations against the Arabians in this direction. D'Anville has placed this Alexandria at the northern point of the lake, at no great distance from Meschid Ali; but, so far as may be collected from Arrian, we should rather have looked for it at the opposite extremity; for there is nothing to

"tween Argunna and Korpoot, or the distance of eighty miles from Dearbeker, the stream of it is so inconsiderable as scarcely to deserve the name of a brook, and consequently the addition of water which it receives between this place and Dearbeker must be very considerable; and the origin of the Tygris is not far distant from the place at which we last crossed it. The Euphrates, on the contrary, is a noble stream, even at Euz Oglee; and I make no doubt, at this season of the year, provided no natural impediments, such as falls, &c. intervene, contains water sufficient to convey from Euz Oglee to Hillah vessels of a considerable burthen." Mr. H. Jones.

Irwin, vol. ii. p. 351, calls the Tigris a sluggish stream, in comparison with the Euphrates or Nile; and yet he seems to have gone down at the rate of five miles an hour.

<sup>30</sup> The rapidity of the Tigris is noticed by all travellers, and its name derived from that quality by the Greeks. Pietro della Vallé thinks the Euphrates swifter, which proves the

violence of both. Cosmas Indicopleustes has a pleasant solution of this; for he asserts that the north of *his* plane of the earth is higher than the south, which is the reason that the Nile flows so slowly *up hill*! while the Tigris and Euphrates run rapidly *down hill* to the south. All that Cosmas saw he reports truly, though ignorantly; but he saw little except Abyssinia. (See p. 132. and 337.) It is a pity that his hypothesis and his theology had not perished, and his topography been preserved; the reverse unfortunately is the truth. See Cosmas, p. 133. edit. Montfaucon.

There is a very singular concurrence of the Christian Cosmas with the Mahomedan Al-Edrissi. See Zocotora, p. 178, and the account of Christians sent there by the Ptolemies.

The Euphrates rises twelve feet perpendicular. The difference of its breadth at Bir is from 630 yards to 214. Pocock, p. 164. Howe's papers. It rises in January, and continues to rise and fall till the end of May, or beginning of June. Mr. H. Jones.

make us suppose he returned out of the lake by the same passage he entered it; neither is it possible, if, as Arrian asserts, he sailed with Babylon on his left. On the contrary, if we subscribe to Niebuhr's opinion, and carry him into the marshes<sup>59</sup> of Lemloon<sup>60</sup>, he had actually deviated from his course, and Babylon was on his left; and this marsh still continues very intricate<sup>61</sup> to navigate, full of islands, and these islands still de-

<sup>59</sup> The greatest part of the marshes of Lemloon have been formed since the year 1784, when Soliman, the present Bacha of Bagdad, threw a bank across the river at Dilvania, with an intention of turning the course of the stream into an old channel, which is certainly the Pallacopas of d'Anville, for the purpose of attacking the Gheesaal Arabs, who inhabit the country between Samavat and Dirvanea, to greater advantage. The obstruction which the Euphrates met with on this occasion, and the rubbish carried down by the stream in consequence of the dyke giving way, produced the greatest part of the present marshes of Lemloon, which are daily increasing. These marshes are very inimical to the commerce of Bussora with Hillah. Mr. H. Jones.

<sup>60</sup> If the authority of Diodorus has any weight, he accords fully with the idea of Alexander's wandering at Lemloon rather than in the Bahr Nedsjef; for he says, the fleet lost its course for three days and three nights. This could hardly happen in the Bahr Nedsjef, which is not fifty miles in extent. Vol. ii. p. 252.

Texeira makes it thirty-five or forty leagues in circuit, and six broad, as I learn from Mr. Howe's papers. If he saw it himself, it is a proof that its existence has ceased between his age and Niebuhr's: it seems also to have been a lake in Pietro della Vallé's time; on his route from Basra to Aleppo he notices

marshes on his left, nearly in this tract. I am not convinced but that it is still a lake, or at least a marsh in summer, though Niebuhr, who was there in winter, saw it not. Tavernier seems to have found the canal dried up. Mr. Howe.

<sup>61</sup> The following are extracts from my own notes, in passing these shallows in 1791:

Tuesday, March 27th. Remain at Samavat.

Dispatch a messenger with letters to Shaik Hamed, Shaik Hossein, and Shaik Kunjar, Gheesaal Shaiks. From Samavat to Mesched Ally is one day and one night's journey for the pilgrims.

28th. Set out from Samavat about 10 A.M.

The bank of the river low and marshy. Arrive at a village. Come to for the night. Letter from Shaik Hossein desires I will not moor until he comes.

29th. Shaik Hossein not coming, do not moor.

30th. Shaik arrives. Employed in loading the baggage on board small boats, in order to pass the marshes.

31st. Pass the marshes and shallows with extreme difficulty. The Euphrates totally lost in these marshes, and the boats proceeding through little channels like ditches.

April 1st. Arrive in the body of the Euphrates, which is now a considerable stream, and we find ourselves about ten miles below Lemloon. Mr. H. Jones.

corated with tombs<sup>62</sup>. In winter there are a variety of channels<sup>63</sup> very narrow, where even the boats of Basra hardly find water; and in summer the course of the stream is so indistinct, that the men who draw the vessels are oftener in the water than on the bank: all these circumstances are correspondent to the difficulties Alexander encountered; and, if we may assume this supposition, he had actually lost his course and was going down the river, till the native pilots put him into the proper channel, and conducted him back again to Babylon.

The situation of Pallácopas is perhaps still capable of discovery, for the banks of the Euphrátes are no where, as far as my information goes, noticed as consisting of stony ground, or rock; if, therefore, an appearance of this quality should occur, it may still be singular enough to attract the attention of our India travellers, some of whom come up every year from Basra to Hilleh and Bagdat, and the extent of country where they should direct their observations cannot exceed twenty or thirty miles, which must be on the left of their course, as they are going up between Rumahieh and Assca.

This is the last public service in which Alexander was engaged; his death took place not long after his return to Babylon, when all his plans of government, policy, discovery,

<sup>62</sup> It is a superstition of the oldest date to build tombs on islands in rivers, or in the sea, or in sequestered spots in the desert. There is, perhaps, hardly the Meschid of an Imam now, where there has not formerly been the tomb, the temple, or the shrine of some ancient hero, king, or fabulous deity. It is a profitable superstition to the natives, because religious visitants are attracted to desert spots, where there is no trade to allure merchants; and, consequently, though the religion of the East

has changed, the superstition has continued.

Ives mentions tombs of Imams, or saints, as still visited in the neighbourhood of Lemloon. Haleb, Hosein, Imam Kasai.

Lemloon lies in lat.  $31^{\circ} 40'$ , better than half way between Basra and Hilléh. See Ives, p. 256, et seq. The whole is a low, wet country, the sides of the river full of sedge, and very distressing to the trackers; p. 257. See also Howel's Journal, p. 48.

<sup>63</sup> See Niebuhr, p. 198. ut supra.

or conquest, were annihilated by the dissensions of the great officers, which commenced upon his decease.

With his designs of conquest this work is not concerned ; but at the head of his native forces, which had constantly been recruited, and possessed of treasures sufficient to allure the last man out of Macedonia and Greece itself, with the accession of the Asiatic levies which he was forming and disciplining on his own model, with the attachment of all his followers to his good fortune and his person, with the reputation he had acquired and deserved, of being the greatest captain of his age, wherever he had directed his arms the invasion must have been formidable, and his hopes of success founded on substantial grounds.

As to the omens<sup>44</sup> also that preceded his departure, or the immediate cause of his death, I shall be silent ; one thing only seems evident, that the poisoned cup is a fiction ; his diary, still preserved, which records the progress of his disease, proves the gradual course of a fever rather than the ravages<sup>45</sup> of poison. The violence of his passions, the perpetual application of his mind, the constant exertion of his faculties, and the excesses of the table, are fully sufficient to furnish causes of dissolution, without having recourse to treason and conspiracy.

But while I decline all inquiry on these subjects, I must glean the few remaining facts that characterise the disposition of this extraordinary man to the objects of discovery, as part of the

<sup>44</sup> No man of importance met his last fate, according to the ancient historians, without omens ; and this superstition is so prevalent, that hardly a family at the present hour is without omens in regard to some favourite member or other. I neither ridicule or believe them ; but must observe, that sacred history

is as sparing upon this subject as profane history is profuse.

<sup>45</sup> Plutarch, who generally believes enough, does not believe the story of this poisoned cup. He says it was not heard of till some years after, when Olympias wished to render the family of Antipater odious.

scheme of empire which he had conceived, and which he never abandoned but with his latest breath.

The remains of the fleet which Nearchus had brought up the Euphrates, and the vessels which had been conveyed overland to Thápsacus, were still at Babylon; the prosecution of the discovery commenced at the Indus was still one of the principal designs in meditation; and the extension of the navigation round the continent of Arabia into the Red Sea was already anticipated. To prepare the way for Nearchus, three single vessels had been dispatched at different times down the Arabian side of the Gulph of Persia, and the report of their commanders had probably given better information to Alexander concerning this obscure coast, than our modern charts furnish at the present<sup>66</sup> moment.

The first of these vessels had been commanded by A'rchias, who proceeded no farther than Tylos or Bahr-ein, the centre of the modern pearl-fishery. A'rchias reported that he had found two islands, one at the distance of an hundred and twenty stadia from the mouth of the Euphrates [the Khore Abdillah], which was sacred to Diana<sup>67</sup>, where a breed of goats and sheep was preserved, and never molested but for the purpose of procuring victims for the deity. To this island Alexander gave the

<sup>66</sup> See d'Anville's chart of the Gulph of Persia. Niebuhr has since supplied a map of Oman, but from oral information only. Alexander doubtless received a better account from his officers than the historians have preserved. He had established an office for these records, and the accounts they contained were not generally divulged.

<sup>67</sup> The perpetual error of the Greek historians, in attributing the deities of their own

country to the superstitions of Asia, is as conspicuous in Arrian as in Heródotus and Xénophon. We must suppose that A'rchias found on this island some rites similar to those appropriate to the Grecian Diana, and adopted her name instead of inquiring for that of the Parsee or Arabian mythology. Thus César attributes Mercury, Mars, &c. to the Celts, now known to be Woden and Thor. Lib. vi. c. 17.



name of Ikarus, and it ought to be one<sup>66</sup> of those at the bay of Grane, but the distance by no means corresponds; for an hundred and twenty of Arrian's stadia are only seven miles and an half, while the real distance is near thirty. Equally disproportionate is the position assigned to Tulos, the other island seen by Archias, which is stated to be at the distance of a day and night's sail in a light vessel, and with a fair wind. This, indeed, is a vague estimate; but ancient geographers consider a day's sail as five hundred Olympian stadia, and if we double this we obtain only a thousand of such stadia, or an hundred and twenty-five miles, while the real distance is upwards of two hundred: but that these are the two islands seen by Archias, notwithstanding the defect of the estimate, can hardly be doubted; for Tulos<sup>67</sup> is described as large, and productive; circumstances which suit no other island on the western side of the gulph but Bahr-ein.

A second vessel had been sent out under the command of Andrósthene, who is said to have proceeded some way round the coast of Arabia; but Héro of Soli extended his course far beyond the two former, for he advanced to Cape Mussendon, or Makæ, seen by Nearchus and Onesícritus upon their approach to the Gulph of Persia. The orders he had received from Alexander were, to circumnavigate Arabia, to go up the Red Sea, and make the bay of Heróópolis<sup>68</sup>, on the Egyptian

<sup>66</sup> Probably this might have been the island of Fekeche, on which there are some date trees, fresh water, and may be seen at about seven or ten miles to the westward and southward of Khore Abbullah. Mr. H. Jones.

<sup>67</sup> See Pliny, lib. xii. c. 11.

<sup>68</sup> Suez is supposed to occupy nearly the site of Arsinoë, built at the western extremity of

the Gulph of Arabia by the Ptolemies at a later period. The actual bay was styled Klysmæ, or Klusma, from which the Orientals still call this sea, the Sea of Kolsum, by a transposition congenial to all their corruptions of foreign terms. Heróópolis was inland from Suez, and capital of a Nome from which the sea of Suez was named the Bay of Heróó.

coast ; by which is implied, that he was actually to go to Suez, the extreme point of the Red Sea nearest Alexandria". These orders develop the whole plan of communication which Alexander had matured in his mind, and which, if he had lived a few months longer, he might have had the satisfaction to see completed. Hiero, however, was not able to execute his orders ; for he seems to have gone down the coast no lower than Makæ or Mussendon, which Nearchus had seen in his passage up the gulph ; and his report when he returned, was, that he had advanced to a great promontory which he did not dare to double, and that the continent of Arabia was of much greater extent than had been conceived.

Such were the previous steps taken to ensure the success of Nearchus ; these vessels had sailed at different times in the interval since Alexander's first arrival at Babylon ; they were all gallies of only thirty oars, and little adapted to the service in which they were employed. What was effected must be attributed to the skill and courage of the officers", who had possibly sailed with Nearchus ; and, what they could not effect, to the deficiency of their vessels, and the state of the science in that age.

polis ; one proof that no city had been yet built like Suez at the extreme angle ; that no trade had hitherto been carried up so high in the Red Sea ; and that Alexander viewed this point of communication with Alexandria with the eye of a master. The sea of Suez is not very practicable, and the Ptolemies afterwards fixed upon Myos Hormus, from which point there was a caravan road to Koptos on the Nile. Irwin travelled from Kosseir to Ghinna, and Bruce from Ghinna to Kosseir, a route which he has described most admirably with all that relates to Myos Hormus, Cosseir,

Portus Albus, and Orneôn ; but all this is lost in the contemplation of an English army passing this desert under the command of General Baird.

" Pliny says this was effected against all evidence. Lib. ii. c. 67.

" A'rchias only is known to be one of Nearchus's officers. Nearchus has not done justice to his followers, or, if he had done it, Arrian has neglected them. Andrósthenes is considered as an officer under Nearchus by Plutarch.

At the time the expedition was frustrated by the death of Alexander, Nearchus had received his orders to take the command of the fleet; and, if he had prosecuted the object of his commission, he must have fallen down the Euphrates before the season that the increase of the river is passed; it was, perhaps, his intention to have waited at the mouth of the Tigris, or made his passage good to Makæ during the latter part of the summer; and the experience he had obtained would naturally suggest to him the expectation of the monsoon from the north-east in November and December. With the assistance of this he might have hoped to get round the coast of Arabia, as he had already performed his voyage from the Indus, but the circumstances are far different; the coast of Arabia is highly dangerous from Mussendon to Ras-el-Had; the winds fluctuate near shore; and, except Maskat, there is hardly an inlet which could afford protection to a fleet, when the wind is boisterous. From this experiment, Nearchus was relieved by the death of his master: but it is impossible to convey a clearer idea of the designs which occupied the mind of Alexander in his last moments, than the language of his own diary will afford. The extract from it is preserved both by Plutarch and Arrian, and does not materially differ in the account of the two reporters, except that Arrian has preserved more notices of the fleet<sup>22</sup>, to which he was perhaps peculiarly attentive, as being more appropriate to the nature of his work. The diary itself is subjoined, with some small degree of licence, in order to harmonise the accounts of the two different authors.

<sup>22</sup> The army was to move on the fourth day, the fleet on the fifth.

It appears from Plutarch <sup>74</sup>, that Alexander had given a splendid entertainment to Nearchus and his officers, two days preceding the account contained in the diary, which commences on the 18th of the Macedonian month Dêsius, in the year 324 A.C. From the circumstances which follow, it is evident that Alexander was on the eve of commencing his expedition against Arabia, and that Nearchus with the fleet was to accompany this expedition, and to coast the Arabian shore down the Gulph of Persia, to that point at least where his own circumnavigation was to commence. If, therefore, we can suppose the army to have been successful, it is not impossible that a plan had been formed of connecting the operations both by sea and land round the whole coast, into the Gulph of Arabia. Impracticable as this may be deemed, the design is similar to that which had been imagined on the coast of Mekran, and the execution of which had been frustrated only by the same disasters that were likely to have occurred on the present occasion.

At the conclusion of the entertainment, when Alexander was returning to the palace, he was met by "Medîus" <sup>75</sup>, who had been feasting a party of the officers, and now requested the favour of the king's company to do honour to the banquet. That night and the following day were spent in festivity, when it is not extraordinary that symptoms of a fever were the consequence of the excess.

<sup>74</sup> Plutarc. in Alexandro, p. 706. Arrian, the diary, but from Ehippus and Nikobûlus. lib. vii. p. 308. The feast might be only one day previous to the 18th.

<sup>75</sup> Medêius Thessalus. There were twenty guests; Alexander drank a cup to each. Athen. x. 434.

This excess is not taken by Athenêus from

<sup>76</sup> This is the account from Plutarch; and Arrian no otherwise disagrees than by softening the excess a little, and dividing it into two meetings instead of one continued.

The diary <sup>77</sup> commences here, and contains the following particulars :

*Désius.*

18th. The king bathed, and, finding the fever upon the increase, slept at the bathing-house.

[The sleeping at the bathing-house is explained by Arrian, who states that he was conveyed on his bed to the river side, and carried over to a garden-house on the opposite shore.]

On this day, also, orders were issued for the land forces to be ready to march on the 22d, and the fleet to be prepared to move on the 23d.

19th. The king bathed ; went from the bath to his chamber ; passed the day at dice <sup>78</sup> with Mediùs ; bathed again in the evening ; attended the sacrifices in a litter <sup>79</sup> ; took nourishment <sup>80</sup> ; in the evening the fever increased, and the night was passed in great perturbation.

Orders were issued for the officers to attend on the next morning.

20th. The king bathed ; attended the sacrifices as before ; conversed while in the bath with Nearchus, upon his voyage from India, and gave him fresh orders to be ready on the 23d.

21st. The king bathed ; attended the sacrifices in the morning ; found no abatement of the disorder ; transacted business with the officers ; gave directions about the fleet ; bathed again in the evening ; the fever still increased.

<sup>77</sup> This diary was written by Eumenes the Karian and Diódotus the Erythræan. Athen. lib. x. p. 434. It is frequently referred to as authentic by the ancients.

<sup>78</sup> In conversation. Arrian.

<sup>79</sup> ἐν κλίνῃ, on a bed or Lectica ; a palan-

quin rather than a sedan.

<sup>80</sup> Ate heartily, according to the translator of Plutarch ; but the author himself omits the adverb, and Arrian says, *sparingly*, ὀλίγον διατρώσας.

*Désius.*

22d. The king removed into an apartment near the bath ; attended the sacrifices ; the fever now ran very high, and oppressed him much ; he nevertheless ordered the principal officers to attend, and repeated his orders in regard to the fleet.

23d. The king was conveyed to the sacrifices with great difficulty ; but issued fresh orders to the naval officers, and conversed about filling up the vacancies in the army.

24th. The king was much more oppressed, and the fever much increased.

25th<sup>a</sup>. The king was now sinking fast under the disorder, but issued orders for the generals to attend in the palace, and the officers of rank<sup>a</sup> to be in waiting at the gate. He suffered still more towards the evening, and was conveyed back again over the river from the garden to the palace. Here he obtained a short repose ; but, upon his awaking, when the generals were admitted, though he retained his senses, and knew them, he had lost the power of utterance.

26th. The fever had made a rapid progress all night, and continued without abating during the day.

27th. The soldiers now clamorously demanded to be admitted, wishing to see their sovereign once more, if he were alive ; and, suspecting that he was dead, and his death concealed. They were suffered, therefore, to pass through the apartment in single<sup>b</sup> file without arms, and the king raised his head

<sup>a</sup> Plutarch has an interval here from the 21st to the 24th ; from τῇ δεκάτῃ φθίνοντος to ἐβδόμῃ.

<sup>a</sup> χιλιάρχας καὶ πεντακοσιάρχας, commanders of a thousand and five hundred.

<sup>b</sup> ἐν τοῖς χιτῶσι καθ' ἑνα πάντες.

*Désius.*

with difficulty, holding out his hand to them, but could not speak.

28th. In the evening the king expired.

This diary, without a comment, exhibits the attention of Alexander to the designs attributed to him in the preceding work better than any other language can express. It proves that he had entertained Nearchus only the day previous to his illness, and that the expedition of this officer was one of the principal objects of his mind almost to the last moment that he had the power of speech.

The date of his death is the only point which now remains to be fixed; and as perfect satisfaction does not occur upon this subject from consulting the chronologers, it is more proper to state the difficulties than to determine the question authoritatively.

The year of his birth is fixed for Olympiad cvi. 1. answering to 356 A. C. in the archonship of Elpínes<sup>a</sup>. His accession to the throne, Olympiad cxi. 1. 336 A. C. in the archonship of Pythodórus. The day of his birth is assigned to the 26th of July by Dodwell; to August the 7th, by Scaliger: the day of his accession is the 24th of September<sup>b</sup>, according to Usher; so that he was somewhat more than twenty years of age when he began to reign; and if his reign commenced in 336 A. C. the thirteenth year of his reign and the thirty-third of his life coincides with the year 324 A. C.

That he died in this year is established by the consent of Diodórus and Arrian; but Diodórus adds seven months, and

<sup>a</sup> See *supra*, b. i. p. 31.

<sup>b</sup> In August. Blair.

Arrian eight, to the twelve years of his reign ; and though these months do not encroach upon the Attic or Olympian year, which did not commence till Midsummer following, they evidently interfere with the calculation of Scaliger and Petavius, if they commence their year in January. This is the reason<sup>66</sup>, I conclude, which induces Usher and Blair to carry on the date of his death to the year 323 A. C. The chronology, indeed, of Diodôrus is so perplexed, that having fixed the Voyage of Nearchus for 327 A. C. and brought Alexander to Susa in 326 A. C. he is obliged to interpolate a year<sup>67</sup>, to give a false archon, and repeat the same consuls twice, a reproach which his learned commentator<sup>68</sup> is obliged to transfer to the transcribers, but which arose in fact from the historian having a year to fill up which he knew not where to find. It is, however, by this contrivance that he brings the date of Alexander's death to accord with the account of Arrian, or rather the authorities<sup>69</sup> which Arrian followed ; so that both the historians agree on the year of the Olympiad cxiv. 1. or 324 before Christ, in the archonship of Hegesias.

It is here that the addition of seven months by the one, and eight by the other, raises a difficulty which it is not easy to obviate.

Petavius has a dissertation<sup>70</sup> expressly to solve this question, which he does by supposing that Dêsius, in the time of Philip and Alexander, answered to Hecatombêon, though it was afterwards made to correspond with Thargélion. Unfortunately,

<sup>66</sup> And so Falkoner's Chronology, 1796, Note 9, in his Audaciz Specimen, &c. p. 168, 169.

<sup>69</sup> Usher agrees with Petavius.

<sup>67</sup> Olympiad cxiii. 4.

<sup>70</sup> Vid. Dissertationes, in fine, tom. ii. Fe-

<sup>68</sup> See Diodorus. Wesseling, vol. ii. p. 248. tav.



Hecatombœon is as little qualified to resolve our doubts as Thargélion, for it commences in July, and if it is July 324 A. C. even the twelve years of Alexander are not complete. Petavius says, indeed, that he had finished his twelfth year, and just taken the auspices for the commencement of his thirteenth; but this could not be true, if his accession was on the 24th of September, as Usher asserts.

Usher agrees with Petavius in supposing that Dêsius originally answered to Hecatombœon, and afterwards to Thargélion; but in his *Ephêmeris*<sup>21</sup> he assigns the 1st of Dêsius to the 25th of April: the 28th of Dêsius consequently corresponds with the 22d of May; and, as his date of Alexander's accession is September 24th, it follows of course that his reign was twelve years complete on that day, in the year 324 A. C. and that the eight months extend to the end of the subsequent May in 323; this, therefore, is a calculation easily admissible, if Scaliger and Petavius had not fixed his decease in 324: but perhaps the archonship of Hegesias will enable us to reconcile the three chronologers; for the Attic year, Olympiad cxiv. 1. commences, according to Dodwell, on the 23d of July, and consequently Hegêsias continued archon till that day. This statement brings all the calculations so nearly to a consistency, that one objection only remains, which is, that I cannot discover in any of the historians two winters after Alexander's return to Susa: one is evident; that, in which he subdued the Kossêi; but the year and five months afterwards, which he must have passed at Babylon and the neighbourhood, is not filled up by the transactions recorded, nor agreeably to the busy spirit of Alexander.

<sup>21</sup> De Anno Sol. Maced. p. 5 and 6.

If, after the reduction of the Kossêi, he entered Babylon in the spring of 324 A. C. we have nothing to employ the remainder of that year but the visit to Pallácopas, which must have taken place during the increase<sup>20</sup> of the Euphrátes, that is, between May and July, for he could not enter the canal before the bank was cut; or if we fix his voyage to the season of closing the Pallácopas, we cannot bring him there later than August, for in September the river is again below its banks. The account of his death succeeds this so immediately, that, if there was an interval of eight or nine months, it does not appear. The opening of a campaign, indeed, suits better with the spring following, as Usher fixes it; and that he was going to set out on an expedition to Arabia appears from the orders issued to the troops and the fleet during his illness. If this consideration, therefore, appears reasonable, we may fix the death of Alexander still in Olympiad cxiv. 1. and the archonship of Hegêsias, notwithstanding it will appear from our different commencement of the year to be the 22d of May, in the year 323 before the Christian era. The difficulty of unravelling the intricacies of the Greek calendar, and the digestion of Greek months must apologise for such a degree of obscurity as may still remain upon this question; and even an acknowledgment of ignorance may be pardonable, since it has been lately proved by the dissertation of Barthelemy on the Choiseuil Marble, that, after all the learned labours of Petavius and Corsini, the arrangement of the Attic months by Scaliger<sup>21</sup> is finally confirmed.

<sup>20</sup> The inundation seldom takes place so early as May. Ives, p. 251.

<sup>21</sup> Wesseling agrees with Scaliger and Salmasius against Petavius, and adduces the

Marbles of Spon and Wheeler. Spon, tom. ii. p. 376. Wheeler, l. ii. p. 480. See Diódorus, lib. iii. p. 216.

Wheeler, Eng. ed. 1682, lib. v. p. 403.

Which Marble, indeed, does not quite agree with either one or the other. It is, however, totally adverse to Petavius, and disagrees with Scaliger only in repeating Poséideon twice, and consequently leaving out Anthestérion.

See Marmora Oxoniensia, Oct°. 1791. 53. xxi. where the months run: 1. Metaglitnion; 2. Boedrómion; 3. Puanépsion; 4. Maimactérion; 5. Poséideon; 6. Gamélion; 7. Elaphébólion; 8. Many'chion. Commented by Corsini and Barthelemy.

Petavius writes, Maimacterion, Puanepsion.

Marmor, lib°. 44. 1.

Boedrómion,

Puanépsion,

Maimactérion,

Poséideon 1,

Poséideon 2,

Gamélion,

Anthestérion,

Elaphébólion,

Muny'chion,

Thargélion,

Scirrophóron,

Hecatombéon,

Metagéitnion.

## ON THE SITE OF OPIS.

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A CONTRADICTION has been imputed to Heródotus, in regard to the situation of Opis. This gives rise to a question which his excellent commentator M. Larcher has left undecided, and which, when my former edition was published, I was unable to determine; but the suggestions of a learned friend have furnished me with the means of giving a probable solution of the difficulty, and induced me to review my former disquisition on this subject. We cannot, however, obtain the satisfaction required, till we have settled the locality of the city; and as Arrian has recorded no circumstances which lead to a conclusion, we must have recourse to Xénophon, who passed through Opis seventy-six<sup>1</sup> years previous to the expedition of Alexander, and has placed<sup>2</sup> it decidedly at the Phuskus.

By the account of Xénophon<sup>3</sup>, it appears to have risen into eminence upon the decline of the Assyrian cities on the Tigris, several of which he found deserted; and it seems to have decayed in its turn, as Seleucia and Apumêa, the creations of the Seleucidæ, became conspicuous. It was only a village<sup>4</sup> in the time of Strabo; and in the age of Ptolemy, when Ctêsiphon<sup>5</sup> was growing up into a capital, it had so far sunk as not to be admitted into his catalogue.

<sup>1</sup> Expedition of Cyrus, 401 A. C.; twelfth year of Alexander, 325 A. C. Blair's Chronology.

<sup>2</sup> So little did the best geographers know of this matter, that Cellarius writes, Chaldæorum tractu fuit Opis, emporium ad Tigrim, sed incertum, quo loco et ordine. Lib. iii. c. 16.

<sup>3</sup> Xenophon, lib. ii. p. 277, et seq. Leunclav.

<sup>4</sup> *Ὀπιδίς κώμη ἐμπορίου τῶν ἐν κύλῳ τόπων.* Strabo, lib. xvi. p. 739.

<sup>5</sup> Ctêsiphon, the Tisbon of the Oriental

geographers, was built on the eastern side of the Tigris, opposite to Seleucia on the western, which in Julian's time was called Cochè [Kôkhè]. See Ammianus, lib. xxiv. c. 5. Coche quam Seleuciam nominant. De Sacy. Mirkhond, p. 351, says it was built by Balasch; but it must have an earlier origin. Chosroes was crowned there, id. p. 329. Julian marched against it as the capital. Its modern title is Al-Modain, or the Two Cities, from its comprehending Tisbon and Seleucia.

Xénophon places the Phuskus at the distance of twenty parasangs, or sixty Roman<sup>6</sup> miles, from the bridge of boats by which the ten thousand crossed the Tigris. The fixing of the passage, therefore, would give the position of the Phuskus; or, if we could ascertain the issue of the Phuskus, we could discover the situation of the bridge. The latter investigation is not attended with difficulty; for between Bagdat and Mosul there are three streams which fall into the Tigris, and no more. These are, if we commence our account

	From BAGDAD,				
	<i>Xenophon.</i>	<i>D'Anville.</i>	<i>Tavernier.</i>	<i>Ptolemy.</i>	<i>Pliny.</i>
1.	The Phuskus,	Odorneh,	Odoine,	Gorgus,	Tornodotus.
2.	The Zábatus,	Altoun Sou,	Little Zab <sup>7</sup> ,	Kaprus.	
3.	The Zathes,	Lukus,	Great Zab <sup>7</sup> ,	Leukus.	

These three rivers Tavernier notices in his passage from Mosul to Bagdat, which he performed by water in a kelek<sup>8</sup>; and the travelling jeweller, as Gibbon styles him, who always travelled with his eyes open, marks the mouth of the Odoine in the very place where the Phuskus ought to be situated. By measuring off sixty Roman miles on d'Anville's map we arrive at Bagdat; consequently it is plain that he intended to fix the passage and the bridge of boats at the site of that city, where it continues to the present hour. If, however, d'Anville should be mistaken (which is hardly probable), the means of correcting his error are easy. Many of our English gentlemen, in going to, or returning from India, prefer the route by Hilleh, Bagdat, and Mosul, to the passage over the great desert between Basra and Aleppo. Any one of these, who should descend the Tigris from Mosul to Bagdat in a kelek, might fix the mouth of the third river on his left by observation<sup>9</sup>. This must be the Odoine or Phuskus;

<sup>6</sup> All the miles in this disquisition are Roman, of which three are equivalent to a parasang.

<sup>7</sup> The Little Zab falls into the Tigris at Sen or As-sen; the Great Zab at Haditha, 36 miles higher. They are large rivers, both together equal to half the Tigris. They are written indifferently Zaba, An-Zaba, or Diava, A-diava; both from דְּבָא, Deva, Chaldaick, and זֶבֶב, Zeeb, Hebrew, a wolf: hence Δύος, and Ptolemy's misnomer Leukus. Schultens, Vita Saladini. Index Geog. Fluvius Zabus. It would be well if he had given us as good a derivation of Kaprus. A wolf,

a wild boar, and a tiger, are proper associates. Zaba, Diaba, and Diava, are the same, for *b* is *v* in Casbin Casvin, and Zava Diava are Java Djava, like Jamuna Diamuna. The English write Jidda, Judda; Niebuhr, Djidda, Dsjudda, often confounded with Ziden.

<sup>8</sup> A vessel supported upon inflated skins, used in these rivers from the time of Xenophon to the present hour. See Tavernier, tom. i. liv. 2. p. 226, et seq.

<sup>9</sup> The passage must be made by water to obtain this object, as the road between Bagdat and Mosul leaves the Tigris.

and the distance between this and Bagdat is easy to obtain, as the latitude of that capital is fixed astronomically by Niebuhr in  $33^{\circ} 20' 0''$ .

By these considerations the eastern side of the Tigris is cleared of its difficulties; and if it were possible to reduce the movements of the army to a consistence with this account, it would be as easy to lay down the distance on the western as on the eastern side of the Tigris. But I am not able to reconcile Xénophon to himself, so as to make his detail of the marches correspond with the local circumstances he has recorded: for, in the first place, he informs us, that two days previous to the battle, they were distant only thirty-six <sup>10</sup> miles from the Median wall; and, upon another occasion, he asserts that it was only twenty-six miles from the Median wall to the bridge over the Tigris. The first of these distances agrees precisely with the measure to the wall of Semíramis; but from that wall to the bridge, taken from the nearest point, it is upwards of sixty miles. These circumstances are perfectly irreconcilable with each other, or with truth. Again, we are told that the Median wall is sixty miles long. This is true in regard to the wall of Semíramis, for Strabo makes its eastern termination at Opis, and Julian passed its western limit at Macepracta: this distance measures sixty miles with precision; but if for this reason we should suppose them both to be the same, the difficulty still recurs of reconciling the difference between twenty-six miles and sixty.

Let us take this in another point of view. It has been proved already, from the march of the Greeks on the eastern side of the Tigris, that it was sixty miles from the bridge to the Phuskus and Opis; but if the termination of the wall on the western side is opposite to Opis, and we suppose the Greek army to have passed the wall at that point, twenty-six miles in this direction south would not carry them to the bridge by thirty-four; and if they did not cross the wall at this point (which they certainly did not), the deficiency increases in proportion to the obliquity of the line they followed.

It is next to be observed that Sitakè, a city within two miles of the bridge, is mentioned (as far as I have learned) by no other author except Xénophon <sup>11</sup>; and it is

<sup>10</sup> Παρετίτατο δὲ τὸ τάφος ἄνω διὰ τοῦ πεδίου ἐπὶ δωδεκά παρασάγγας, μέχρι τοῦ Μυδίας τείχους. Xen. Anab. i. 262. Leunclav. These twelve parasangs or thirty-six miles distance are noticed on the day that Cyrus expected to meet the king's army, but the battle did not take place till two days after. He had marched that day only three parasangs; and if we as-

sign the same extent to the two following days, six parasangs to Kunaxa, and six from Kunaxa to the wall, make up the twelve required. D'Anville saw this, and has framed his measures accordingly.

<sup>11</sup> The Sittakè of Ptolemy is in Sittakenè. Bochart and Cellarius, lib. iii. c. 17. cite the Psittakè of Stephanus Byz. with little inform-

remarkable that the district called Sitakênè by other authors is placed on the eastern side of the Tigris. This is singular, but it does not justify the supposition of an error in the name; for it is to be presumed that every officer must know the name of the place in which he is quartered; but it is introduced to shew that if there is an error in the position, no ancient authority is extant by which it can be corrected. The site which d'Anville assigns to it is very nearly the ground occupied by old Bagdat, west of the Tigris; and this he is fully justified in deducing from the sixty miles between the bridge and the Phuskus. Here, then, is a third instance of the difference between the twenty-six and sixty miles, for which no solution appears.

But it is very remarkable that at the point where the two rivers approach nearest to each other, the interval is given in a variety of maps with no greater fluctuation than the difference between twenty-four<sup>12</sup> and twenty-six miles; and this may induce a persuasion that the Greeks passed a wall close to the Euphrates, and then continued along it within side, till it directed them to Sitakè. I cannot demonstrate this; but the remains<sup>13</sup> of a wall in this direction, with the ruins of buildings, are seen by every traveller who comes by land from Hilleh to Bagdat: they are noticed by Tavernier and Ives, and represented with great attention in Delisle's map. Delisle<sup>14</sup>, indeed, gives it an extent of near seventy miles, in which he makes it approach to the length of the Median wall, as stated by Xénophon; and he carries the western termination of it to Babylon. This is not conformable to my own conception, but is an evidence that Delisle found another wall besides that of Semíramis. D'An-

tion, but that it is near the Tigris. This might be true of Ptolemy's Sittakè also, but proves nothing in favour of Xenophon; and other reference I know not.

<sup>12</sup> Strabo gives this distance at 200 stadia, or 25 miles, lib. ii. p. 80; and d'Anville places the narrowest part between Bagdat and Roswaina, with an interval of 27 Roman miles.

<sup>13</sup> Ives went to visit Nimrod's tower, which lies west by north about nine miles from Bagdat. "We passed the Tigris by the bridge of boats, and rode through old Bagdat; from whence, quite up to the tower, ruins of buildings, either wholly above or somewhat under ground, are still to be seen, which can be no other than the remains of the ancient Seleucia." This is perfect evidence for the ruins, perhaps for a wall also. But it is very strange that Ives, who had visited Al-Modain, should not know that Seleucia

was to be found there 22 miles below Bagdat, and to the south-east instead of north-west. See Ives, p. 297. Tavernier, tom. i. p. 238. Amsterdam ed.

<sup>14</sup> I was favoured with Delisle's map by Mr. Jacob Bryant, which gives this wall and ruins in a very conspicuous manner. What they are, whether the extension of old Bagdat, or the remains of Sitakè, or of a wall built by Zobeida, wife of Haroun Al Raschid, which extended across the desert to Mecca, is difficult to say. See Abd-ul-Khurreeem, p. 129. But if I could make the movements of the ten thousand previous to the wall correspond, I should say this was the Median wall, and two days march within it would tally with the interval between the Euphrates and the Tigris in this part. See Gasparo Balbi. Purchas. vol. iii. p. 1723.

vile once seems to have been of the same opinion; for, in a map drawn up for Rollin's Ancient History, he brings a second wall in a curve from the centre of that of Semíramis, and conducts it to the Euphrates, very nearly at the point where the movements of the army require it. If this is no proof that such a wall exists, it implies at least that d'Anville could not reconcile the facts recorded in history without such a supposition.

After all, Xenophon himself informs us that the Median wall was *not*<sup>15</sup> far from Babylon; and this expression, though indefinite, does not tally with the position of the wall of Semíramis, which measures in a right line an hundred and twenty-five miles from that capital. I should consider this as conclusive evidence in favour of a second wall, if it were not connected with another estimate of Xenophon's, which states that it was three hundred and six miles from the field of Kunaxa to Babylon. This will not be found correspondent to truth in any map. On d'Anville's it measures only one hundred and forty; and with the allowance of a sixth for road distance, it cannot extend to much more than an hundred and sixty. Xenophon, indeed, did not march over this interval, and therefore must have taken his estimate from report. Of the movements of his own army, however, he could not be ignorant: these I shall now give in detail; and if no satisfactory solution should be obtained of the various difficulties which have been stated, I shall at least furnish facts for abler geographers to form calculations on, which may lead to the discovery of truth.

Let us then assume, with d'Anville, that the field of Kunaxa was eighteen miles from the wall of Semíramis, and let us commence our inquiry from the position of the Greek army on this field the day after the battle. Their first movement was retrograde, to join Ariëus, who was now in the camp which Cyrus had left on the morning of the preceding day. The Greeks commenced their march in the evening, and joined Ariëus at midnight: the distance may be estimated at three<sup>16</sup> parasangs, or nine

<sup>15</sup> The wall, according to Xenophon, was built of baked bricks laid in bitumen, 20 feet broad, 100 high, and 20 parasangs in length, ἀπείχετο δὲ Βαβυλῶνος ἑκατόν, and was *not far* from Babylon. This account by no means corresponds with the 306 miles which he gives from Kunaxa, or with the distance marched after the battle. See Anab. ii. p. 282. Ed. Leunclav.

<sup>16</sup> Two days previous to the battle, Cyrus marched only three parasangs or nine miles, with his army in battalia; and I give the same

extent to the two following days, as he proceeded negligently, and was taken unprepared on the day the battle was fought, just before he was going to encamp for the night; consequently the Greeks had only three parasangs to return in order to join Ariëus. Xenophon, however, says in another place, lib. i. 269. that it was four; but this is an estimate from report. τίτταρις δὲ ἑκατόντο παρασάγγαι τῆς ὁδοῦ εἴκει. A difference of two or three miles does not greatly interfere with my calculation; and it is to be remarked, that the whole length



miles, and the interval between the army and the wall may be increased to twenty-seven. Upon consulting with Ariëus the following day, it was deemed impossible to return through the desert; they determined, therefore, to proceed towards the north, in order to find the supplies necessary for the army; and to make long marches, that they might increase their distance from the king. They did march to the north, for it is expressly noticed that they moved with the sun <sup>17</sup> on their right; and a long march would amount to five or six parasangs, say eighteen miles. This course, as the country lies <sup>18</sup>, would not enlarge their distance from the wall; but let us estimate it at thirty miles. This is of importance, for it is the point farthest north which they reached, as on the day following they treated with heralds sent from the king, and were conducted to villages where their wants were relieved. This movement must be either towards the east or the south, most probably the latter, as they seem, from the circumstances which follow, to tend towards the wall; and if we estimate the march at three <sup>19</sup> parasangs, they were now from twenty to five-and-twenty miles distant, according as we give a direction to their route.

At these villages they remained three days, when Tissaphernes arrived from the king, who, after amusing them for three days more, at last came to an agreement, that he would himself conduct them home, and furnish them with proper supplies on their march. With these delusions he detained them twenty days more, during which interval he corrupted Ariëus with hopes of pardon, and finally detached him so completely from the Greeks, that when the different armies were again set in motion, Ariëus joined the king's forces on the march, and encamped with them in the evening.

Upon the commencement of the march again, both armies proceeded for three days, and their direction must have been southward, for at the termination of that period they reached the wall; and if we calculate their progress at three <sup>19</sup> parasangs

of the march from Thapsacus to Kunaxa exceeds the real distance in the proportion of 196 parasangs to 140, including the road distance.

<sup>17</sup> *ἡ δὲ ἡμέρα ἔχουσι τὸν ἥλιον*, p. 277. In the morning this would make their course north; and as the sun advanced towards the south, their progress would take an inclination to the east: and this we may suppose would coincide with the intention of Ariëus to conduct them towards the Tigris.

<sup>18</sup> D'Anville's map makes Kunaxa lie near Hit in a sinuosity of the Euphrates, which does not very well accord with the approach

of the king's army, as described by Xenophon. I know not what authority d'Anville has for this curve, but it is probably founded on good information; and if it is correct, the Greek army is nearer the wall, after proceeding 18 miles north-east, than when they left their camp in the morning.

<sup>19</sup> Four parasangs each are attributed to the two days' march within the wall. I do not wish to accommodate distances, but an error on the side of moderation is better than one in excess: perhaps they always marched less than their calculation.

a-day, the interval corresponds within two miles, with the distance already supposed, that is, it would amount to twenty-seven miles, instead of twenty-five. This must, therefore, be the wall of Semiramis, for it will not agree with the supposition of any interior fortification whatsoever.

Here, then, the same difficulty recurs ; for let them pass the wall at any given point, it could not be less than sixty miles to the bridge, and might be much more. How is this to be reconciled with the declaration in express terms, that from the wall to Sitakè they marched eight parasangs in two days, and that Sitakè was fifteen stadia from the Tigris and the bridge ?

This difficulty will not be relieved by giving a more northerly position to Sitakè than that which d'Anville has assumed ; for then the distance from Sitakè to the Phuskus, on the eastern side of the Tigris, must be curtailed in the same proportion : contradicting directly another express declaration of the text, that it was twenty<sup>20</sup> parasangs, or sixty miles, from the bridge to that river. This assertion is so positive, that it removes all doubt in regard to the position of Opis ; and if I am not able to arrange the distances on the western side of the Tigris, I at least state the question fairly, and leave it open for the discussion of those who have better means of information than myself.

At Opis contrivances were invented to keep the Greeks in alarm, and induce them to pass the river, as Xenophôn supposes, lest they should take post in the country, and, by encircling themselves with the canals as the means of defence, occupy a station from whence they might molest the districts in the neighbourhood. A different reason is more obvious : for Tissaphernes had manifestly a design of placing two navigable rivers between them and Greece, instead of one ; and as he was meditating the destruction of their commanders from the beginning (which he afterwards effected), he concluded that the obstructions afforded by two such rivers ensured the annihilation of the whole army. Neither did he want a pretence for this protraction of their route, which is apparently in direct opposition to their return. The country through which he proposed to conduct them affords the means of support, while the course by which they had advanced from Thapsacus, or the passage over the great desert, would be represented as impracticable. It was this consideration which induced both Antony and Julian to attempt their retreat, by tending to the north ; and modern travellers, who wish to avoid the desert, generally go up from Bagdat as high as Mosul, or higher, before they take a westerly direction across Mesopotamia to Aleppo.

<sup>20</sup> Xen. Anab. p. 284.

These transactions, indeed, are foreign to the subject of our inquiry; but as they are connected with Opis, and the treachery of Tissaphernes took effect at the river next in order to the Phuskus, the digression may be pardoned, if it throws light on historical facts misrepresented by some, and by others not understood.

If we have ascertained, however, the situation of Opis, by the confluence of the Phuskus, or by any combination of circumstances whatsoever, nothing remains but to shew that Heródotus has not two different Opis's, but one only, and *that* in the position here assigned. Having been led into an error myself on this subject, in the former edition, I am happy to have had the means of correction suggested to me on the present occasion; and equally ready shall I be to embrace any probable solution of the fresh difficulties which I have stated in this disquisition. The question relative to the Opis of Heródotus may be set at rest by the following considerations.

Heródotus notices three <sup>21</sup> rivers, to which he gives the name of Tigris: the principal stream he derives from Arménia, and the two inferior rivers from Matiènè, which answers to the northern or mountainous part of Media <sup>22</sup>; to these he adds a fourth, which he calls the Gundes. Now it does not interfere with the present inquiry, whether we suppose, with Major Rennell, the two Zabs to be the two inferior Tigris's, and the Diala to be the Gundes; or whether we embrace the opinion of M. d'Anville <sup>23</sup>, who assumes the greater Zab and the Diala <sup>24</sup> for the two Tigris's, and the river of Khor-

<sup>21</sup> Ποταμοὶ δὲ πύσι περὶ τοὺς τέσσαρες διὰ ταύτης ῥέουσι . . . πρῶτος μὲν Τίγρης, μετὰ δὲ δευτέρος τε καὶ τρίτος αὐτὸς ἀναμαζόμενος· οὐκ αὐτὸς ἐὼν ποταμός, ἀλλ' ἐκ τῶ αὐτοῦ ῥέουσι· ὁ μὲν γὰρ πρότερος αὐτίκῃ καταλεχθεὶς, ἐξ Ἀρμενίων ῥέει· ὁ δὲ ὑστερον [ὁ δὲ ὑστερον, Pauw apud Wesselingium] ἐκ Μαιτινῶν· ὁ δὲ τέταρτος τῶν ποταμῶν ἕνομα ἔχει Γύνδης. Lib. v. 397.

"There are four rivers which cannot be passed without boats. The first is the Tigris; the second and the third have the same name, but are not the same river, nor do they flow from the same country: for the one mentioned first comes out of Armenia, the two others from the province of the Matièni. There is likewise a fourth river, which is the Gundes."

The question among modern geographers is, whether the three tributary rivers are the two Zabs and the Diala, or the Great Zab, the Diala, and the river of Kharrabad. This has been examined in a former part of this work, and does not enter into the question now under consideration.

<sup>22</sup> The province of Media is styled Khoestan by the Persians, and Al Gebal by the Arabs: both express a region of mountains, correspondent to the Zagrus of the Greeks.

<sup>23</sup> See the observations of M. Larcher on this passage, which are less satisfactory than his remarks usually are.

<sup>24</sup> Mr. Ives is the only European traveller I am acquainted with, who has crossed the Diala, which he calls the Yealla. He went to visit Solyman Pauk and the Tackti Kesra, without knowing any thing of Seleucia. He has given a drawing of Tackti Kesra, the Divan Kesra of Pietro della Vallè, that is, the throne or palace of Khosroes: the east front 300 feet, breadth of the arch 85, height 106, length of the arched room 150. I wish he had given a larger account of the river. Al-Edrissi makes it fifteen miles from Bagdat; d'Anville, twenty or twenty-one; Ives, not so much; but his hours only are specified, and they are dubious. Irwin visited the same ruin, but went down by the Tigris. Abdul Khurrem makes it six farsangs.

remabad for the Gundes. They are all four confluent streams, which join the Tigris; and not one of them reaches the sea with its own proper waters. But the main and principal river is that which rises in Arménia, which passes by Opis<sup>25</sup>, and flows into the gulph of Persia. It is distinguished by these characters from its subsidiary streams; and these are sufficient, even at the present hour, to mark it for the true Dejela, which brings all these waters to Khorna; where, adding the Euphrates to its volume, it descends to the gulph with the title of the Shat-el-Arab. It is somewhere between Khorna and the sea that we are to look for the Ampè, mentioned in the sixth book of Herodotus, a town which he places at its issue. We cannot say at Ableh, for it seems to stand too high; we cannot say at Abadan, for it possibly did not exist in that age; but it ought to be in the Dauasir, or tract between the Khore Abdillah and the Shat-el-Arab, as Nebuchadnezzar founded Terêdon on that projection of the continent, and consequently Terêdon and its district existed previous to the age of Heródotus.

Whether the Euphrates, even in that early age, came into the sea through the Khore Abdillah, as Arrian supposes, is highly problematical; but that a canal, derived from that river, passed through the Khore is ascertained. Its principal junction with the Tigris seems to have been at Khorna in all ages: its canals in various districts have been mistaken for the main channel, by a multiplicity of geographers; and this is the reason why it has by several been described as carried into the Tigris by the Nahar<sup>26</sup> Malcha, the Nahar Isa, or the Tsarsar; and why its course is so little known below Babylon, as to produce an opinion that it was lost in the desert of Arabia: but it flows there still; it is still navigable; and notwithstanding the obstruc-

<sup>25</sup> The confusion seems to arise from Heródotus himself, who says, in the sixth book, that the Tigris which flows by Ampè issues into the sea; and in the first book, that the Tigris which flows by Opis discharges itself into the sea of Erythras, that is, the gulph of Persia. The expression in both passages is the same; but Ampè, we may conclude, is at the mouth, and Opis is mentioned to shew that the principal river passes by that city, and that the tributary streams do not. There is still something not quite accurate in this, for the two Zabs join the Tigris above Opis.

Γύρδης . . . ἐκδιδοὶ ἐς ἑτέρον ποταμὸν Τίγριν, ὁ δὲ παρὰ Ὀπίω πόλει ῥέει ἐς τὴν Ἐρυθρὴν θάλασσαν ἐκδιδοῖ. Lib. i. p. 89. But, lib. vi. p. 447,

he writes, Ἐν Ἀμπῇ πόλει, παρ' ἣν Τίγρης ποταμὸς παραρρίων, ἐς θάλασσαν ἔξισιν.

Whether there is any difference between ἔξισιν and ἐκδιδοῖ I cannot say, but παραρρίων is common to both.

<sup>26</sup> These three canals are mentioned by different authors, either classical or oriental, as forming communications between the Euphrates and the Tigris. They have no doubt been confounded or mistaken: but the canal that pointed to Seleucia is the Nahar Malcha of Ammianus, lib. 24.; and the line of this canal with fortifications was seen by Mr. H. Jones, between the Caravanserais Buranoor and Azad.

tions which intervene at Lemloos, the intercourse between Basra and Bagdat is still carried on by this river, in preference to the Tigris.

I dare not presume that this disquisition will be deemed satisfactory. My own conceptions led me to suppose that there were two walls; and that the interior one was the Median wall of Xenophon; but I cannot ascertain this by facts, and I will not support it from a spirit of system. If in this respect there is a failure of proof, it is still a gratification to reconcile such an historian as Heródotus to truth,

## A P P E N D I X.

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### ADVERTISEMENT.

**T**HE learned author of the second Dissertation says, with no little kindness, that had I had the *ill luck* to have consulted Usher's Ephéméris, I should not have applied either to his Lordship or Mr. Wales for a solution of my difficulty: but however it might have been unfortunate to have missed the acquisition of two such Papers, I feel in some degree the charge of negligence, for having failed in my pursuit at the very moment when I was in sight of my object.

The truth is, that I had worked my way through a mass of obscurity by the assistance of Scaliger, Petavius, Dodwell, and Columella; but the edition of Usher which I used was the English one, and in that, though I found a reference to his Treatise on the Solar Year of the Macedonians (which I have noticed), I did not find the treatise itself; neither is it contained in that edition. This, however, was the clue; and I am sensible of vexation, rather than shame, that I neglected the opportunity of seizing it.

In that Ephéméris, Usher, upon the authority of Euctémon, places the evening rising of the Pleiades on the eighth of Dios, corresponding with the first of October. This is Usher's own date of the voyage, upon a comparison of the two passages from Arrian and Strabo, in the eighteenth page of his treatise; and affords an irrefragable proof, among a thousand others, that both authors copied from the original Journal of Nearchus.

My own date, with the assistance of Dodwell, came out the second of October; and this difference, though of one day only from the estimate of Usher, I had laboured much to reconcile. The error was on my side; for I had miscalculated by reckoning the thirteenth of September, which is the first of Boëdrómion, exclusive, instead of inclusive. This is the extent of my offence; and, as my confession is unreserved, I have a right to expect absolution rather than penance.

After all the trouble caused by the discussion of this question, it is no little pleasure to find, that the issue renders Strabo and Arrian consistent, that it justifies Usher and Dodwell in their calculation of the year and month, and that this calculation is confirmed by the deduction of two proficients in a science which I have never had leisure to cultivate, and to whom I had stated the question without furnishing all the data it required. I have now only to request, that the reader would consider the departure of the fleet from its first station in the Indus as fixed for the *first* instead of the *second* of October.

## DISSERTATION I. i.

*On the Rising of the Constellations.*

DEAR SIR,

HAVING at last finished the calculations which are necessary to enable me to resolve your questions from Columella, I will endeavour to give you the best and plainest answers to them that I can. But to do this it may be necessary to say something concerning a branch of astronomy which was much cultivated by the ancients, namely, the risings and settings of the stars, as they respect the rising and setting of the sun. The points chiefly attended to were, the times when certain fixed stars, or constellations of stars, rose or set with the sun; the times when those stars set as the sun rose, and the times when they rose as the sun set. The determination of these points constituted a principal part of the astronomy of the ancients, and was esteemed by them of the utmost importance, because it was by these means that they regulated their festivals, judged of the returns of the seasons, and even estimated the length of the year.

As the sun, apparently, revolves in the ecliptic annually from west to east, while the fixed stars remain constantly in the same place, it is manifest the sun must come into conjunction, at one



time of the year or other, with every star. In the present age the sun comes into conjunction; that is, into the same part of the heavens, with the Pleiades about the middle of May, and, in consequence, rises and sets about the same time that they do; in this position, the constellation was said by the ancients to rise cosmically and set achronycally. But it must be observed, that in all places which have northern latitude, a star, which is to the northward of the sun when they are in conjunction, will rise at the same instant that the sun rises a few days before the sun comes into conjunction with it, on account of the obliquity of the sphere; and will not set at the same instant the sun sets until the sun has passed the conjunction, and got to the eastward of the star: that is, the time when the star rises cosmically happens some days before that when it sets achronycally; and the number of days by which the first of these circumstances precedes the latter depends partly on the latitude of the place, and partly on the distance which the star is to the northward of the sun at the time of conjunction. On the contrary, if the star be south of the sun at the time of conjunction, the star will set achronycally before the conjunction, and will not rise cosmically till after it is past. The contrary to both these positions takes place in southern latitudes.<sup>1</sup>

While the sun is westward of the point which it is in when it rises with the star, it is manifest that the sun must rise before the star, and, consequently, the rising of the star cannot be seen. It is as obvious that the rising of the star cannot be seen when the sun and star rise together: but some time after that,

<sup>1</sup> If the place of observation be between the tropics, there are cases in which these two general rules do not hold good; but they are very limited, and not worth considering here.

when the sun has got so far east of the star as to be considerably below the horizon when the star rises, the twilight will be so little advanced that the star may be visible at its rising; and, as soon as this was the case, the star was said to rise heliacally. The number of days that this circumstance happens after the time when the star rises cosmically depends partly on the latitude of the place, partly on the declinations of the sun and star, and partly on the star's brightness: it can therefore only be determined, like the beginning and end of twilight, by observation. For the same reason, the star cannot be seen to set when it sets at the same instant that the sun sets; nor can it be seen to set for some days before that time, on account of the twilight: and when the sun approached so near to the star that it could be no longer seen to set, it was then said to set heliacally. These phenomena happen now about the latter end of May and the beginning of June.

After this, the sun advancing still eastward in the ecliptic, while the star keeps its situation, will have got so far beyond it, that some time in the beginning of November the sun will set as the star rises; and the star is then said to rise achronically. Moreover, the sun and star being at this time nearly in opposite points of the heavens, it must follow that about the same time, or a few days either before or after it, according as the place is in south or north latitude, and the star south or north of the sun at the time of conjunction, the star must set as the sun rises; and when it did so, it was said to set cosmically.

The longitude and latitude of the *Lucida Pleiadum* was determined with great accuracy by the late Dr. Bradley to be  $8^{\circ} 26' 38'' 34''$ , and  $4^{\circ} 1' 36''$  north respectively, at the beginning of

the year 1760; from whence it will be readily found that, at this time, and in the latitude of Rome, the Pleiades rise cosmically on or about the 10th of May, and set achronycally about the 20th of the same month: and that they rise achronycally about the 12th, and set cosmically about the 21st of November.

These two last-mentioned circumstances, according to your extract from Columella, happened on the 10th of October and 8th of November, in the year 42 after Christ. You add, that according to Strabo, Nearchus sailed from the Indus, at the time when the Pleiades rose in the evening, or achronycally in the year 326 before Christ; that Arrian informs us this was on the 2d of October; and you wish to be informed how near these dates and circumstances agree together when the precession of the equinoctial points is allowed for. You wish also to have a popular explanation of the term *Precession, in antecedentia*, and an account of its application to, and effect on, the phenomena which have been explained above.

The two points where the ecliptic crosses the plane of the earth's equator are called the Equinoctial Points. That which the sun is in on the 20th or 21st of March, when he passes to the northward of the plane of the earth's equator, is called the Vernal Equinoctial Point; and the other is called the Autumnal Equinoctial Point.

The earth is not a perfect sphere, but is in the form of such a bowl as is used on a bowling-green; the two poles being in the two flat sides, and its greatest diameters all in the plane of the equator. Now, as all bodies attract each other, the protuberant parts about the earth's equator are acted on by the sun and

moon, when they are out of the plane of that equator, in such a manner as to cause the two equinoctial points to be carried backward, along the ecliptic, at the rate of  $50\frac{1}{2}$  seconds of a degree in a year; and this motion of the equinoctial points is called, though somewhat improperly perhaps, the Precession of the Equinoctial Points.

As the vernal equinoctial point is carried backward by the above-mentioned quantity yearly, while the fixed stars retain their places, and as we continue to reckon the longitudes of the stars from that point, it is manifest the longitudes of the stars will be increased every year by  $50\frac{1}{2}$  seconds. But as the motion of these points is in the plane of the ecliptic, this apparent motion of the stars will be parallel to the ecliptic; and, consequently, their distance from the ecliptic, which is called their latitude, will not be altered by it. It must be farther observed that the year (as it relates to astronomy) always begins when the sun is in the vernal equinoctial point; from which it will be evident that it is later, by a small quantity, every year than it was the year before, when the sun comes to the same longitude with any particular star, or to that point of the ecliptic where it rises or sets with it: and this is the cause why the Pleiades rise as the sun sets, and set as the sun rises, later now than they did formerly.

It has been already said, that the longitude of the *Lucida Pleiadum* was  $8^{\circ} 26' 38'' 34''$ , at the beginning of the year 1760; but in the 1718 years which elapsed between the years 42 and 1760, the precession of the equinoxes, at the rate of  $50\frac{1}{2}$  seconds in a year, amounts to  $86,472\frac{1}{2}$  seconds, or  $24^{\circ} 1' 12\frac{1}{2}''$ , which being taken from  $8^{\circ} 26' 38'' 34''$ , leaves  $8^{\circ} 2^{\circ} 37' 21\frac{1}{2}''$  for the

longitude of  $\pi$  Pleiadum in the year 42 after Christ: and, as the latitudes of the stars remain the same\*, the point of the ecliptic which then rose with this star was  $\gamma$   $29^{\circ} 7' 9''$ , the obliquity of the ecliptic being at that time  $23^{\circ} 41' 24''$ . Hence the point which set as the star rose was  $\alpha$   $29^{\circ} 7' 9''$ ; and this point, I find by Mayer's Tables, the sun was in on the 19th of October. By a similar process, I find that the point of the ecliptic which rose as the Pleiades set was  $\pi$   $4^{\circ} 20'$ , which point the sun occupied on the 29th of October that year.

The former of these determinations differs nine days, and the latter ten from the times assigned by Columella; but it may be remarked that the former of these errors is in defect, and the latter in excess; and as the stars rise and set sooner as the year advances, it follows, that on the 10th of October the sun would set a short time before the star would rise, and on the 8th of November the star would set some time before the sun rose; both which circumstances appear to be necessary if these phenomena were determined by observation, as, most probably, was the case. For it is manifest the star's rising cannot be observed when it rises exactly as the sun sets; nor can its setting be seen when it sets exactly as the sun rises, on account of the daylight, as hath been already observed: but, perhaps, the one might be seen by a good eye, in the latitude of Rome, nine or ten days before, and the other as much after the time when the two circumstances happened together; and I have not a doubt but that the difference between Columella's observation and my calculation is to be attributed to this cause.

\* I take no notice here of the very small fixed stars by the actions of the other planets change which is caused in the places of the on the earth.

I am next to inquire whether the effect of the precession of the equinoctial points will reconcile Strabo's account, which states that Nearchus sailed at the time when the Pleiades rose in the evening, that is to say, as the sun set, with the account of Arrian, who says expressly, that he sailed on the 2d of October in the year before Christ 326. In the interval between the year 42 after, and the year 326 before Christ, the precession amounts to  $5^{\circ} 8' 42\frac{1}{2}''$ , which being taken from  $8^{\circ} 2' 37' 21\frac{1}{2}''$ , the star's longitude in the year 42 after Christ, leaves  $\approx 27^{\circ} 28' 38\frac{1}{2}''$  for the longitude of the *Lucida Pleiadum* in the year 326 before Christ; and the point of the ecliptic which rose with the star, in this situation, at Rome, in the year 326 before Christ, the obliquity of the ecliptic being then  $23^{\circ} 44' 13''$ , was  $\approx 19^{\circ} 26' 41''$ : but as the sun was setting when the star rose, it must have been in  $\approx 19^{\circ} 26' 41''$ , the opposite point of the ecliptic, which point the sun occupied on the 17th of October; fifteen days after that which is fixed by Arrian for the sailing of Nearchus. Now if nine or ten days were sufficient to render the rising of the Pleiades visible at Rome, we are certain that more could not be requisite to render their rising visible at the place Nearchus sailed from, which is in a much lower latitude; we are therefore led to suppose, either that Strabo spake in general terms, (as indeed seems to be the case,) meaning only to point out the season, and not the day when Nearchus set out on his expedition, while Arrian gave the precise day on which it happened, or that some mistake has crept into one or the other of these authors: to me, the former supposition seems most natural.

But notwithstanding it is highly probable that the apparent difference between the two historians ought to be referred to one or other of these causes, it is by no means certain that either one or other of them must be resorted to. It is possible that it ought to be attributed to another cause.

The preceding calculation is founded on a supposition that the Julian calendar has been in use ever since the year 326 before Christ; but we know it was not established by law till about 45 years before Christ, and that before that æra different modes of computation were used by different persons, who did not always tell us what mode of computation they made use of. Now, notwithstanding both Arrian and Strabo refer to the same authority, it is possible the years by which that author reckoned might differ from Julian years; and if they did, a greater difference than that which exists between them might arise from that circumstance.

There is a circumstance occurs in the foregoing calculations which may lead some persons to conclude I have committed a mistake in them; and which it is therefore necessary to obviate. The quantity of the precession in the interval between the year 326 before, and the year 42 after Christ is  $5^{\circ} 8' 42\frac{1}{2}''$ , a space which the sun is more than five days passing over. It may therefore be supposed, that the difference between the achronical risings of the same star, at these two times, ought to be between five and six days, whereas I make it little more than two: but it must be considered, that near three of these five days are anticipated by the excess of the Julian year above the true length of the solar year in that interval.

This, Sir, is the plainest answer I can give to the questions you have been pleased to propose. They betray no ignorance in a person who does not profess to be an astronomer, as the circumstances are certainly sufficient to create doubt, which every rational mind must be anxious to clear up. If I have contributed any thing toward this by what I have written, I shall be very happy, and am,

REVEREND SIR,

Your's very sincerely,

WILLIAM WALES.

CHRIST'S HOSPITAL,  
Jan. 14th, 1796,



## DISSERTATION I. ii.

*On the Rising of the Constellations.*

DEAR SIR,

YOU will receive, I hope, some satisfaction from the result of my calculations upon the different dates, assigned by Arrian and Strabo, to the commencement of Nearchus's expedition; which at first, I confess, I thought too discordant to be reconciled by any probable conjecture, without tampering with the text of Arrian, which, in my judgment, seemed to carry some marks of corruption.

The method I have taken has been to go directly to the investigation of the time of the acronychal rising of the Pleiades, in that part of the world where the voyage was undertaken, in the year before Christ 326, which was the year of the voyage; and, for a reason which will presently appear, I have not concerned myself at all with Columella's risings or settings.

Arrian says, that Nearchus sailed from the mouth of the Indus as soon as the Etesiaë ceased, in the eleventh year of the reign of Alexander, according to the reckoning of the Macedonians and the Asiatics, and on the 20th of the Athenian month Boëdromion. This eleventh of the reign of Alexander, it is agreed, was the year before the vulgar æra of our Lord 326; and the

20th of Boëdromion in this year, upon the authority of eminent chronologers, you take to have been the 1st of October, St. Jul. And in this reduction, if there be any error, which, though I suspect, I will not too confidently assert, it cannot be of more than a single day.

Strabo's account is, that "the fleet sailed in autumn about the season of the evening rising of the Pleiades, before the winds were fair, the barbarians attacking them and forcing them to sea."

This claims great attention, for it is Nearchus's own account. The words of Strabo import as much, and the thing speaks, in some measure, for itself. The character, by which the time is described, is of a sort to have been taken from the journals of the mariners themselves; for any second-hand writer of the voyage would have expressed it in a more popular manner, by affixing to it, as we see Arrian has done, a precise date, or a date at least pretending to precision, in some well-known civil reckoning. But if this character of the time of the commencement of the expedition came from the original journals of the mariners; it follows, that some two or three days before they sailed, or two or three days after, (for in this sort of date no greater accuracy is to be expected,) they *saw* the Pleiades risen in the east, some short space of time after the sun was set in the west; or rather, since the star could not be seen when the sun was yet upon the horizon, they saw the star about an hour after sunset with that altitude, that they concluded it had risen at the moment when the sun set.

We have to inquire, therefore, on what day of the year, in the year of this voyage, namely before Christ 326, the Pleiades

rose acronychally in that part of the world, from which these voyagers set out; that is to say, at the mouth of the Indus. If this should be found to agree with Arrian's date, all will be well. If not, the phenomena of the Roman horizon in the time of Columella, even upon the supposition that Columella's representation of them is exact, will throw no light upon our subject.

Now I assume  $24^{\circ}$  north for the latitude of the mouth of the Indus. This is nearly the truth; and I take the even number, because the difference of one-half of a degree, more or less, will not affect the result of the calculation.

By Dr. Bradley's observations, the longitude of Lucida Pleiadum, in the beginning of the year 1760, was  $\gamma 26^{\circ} 38' 34''$ , and the latitude  $4^{\circ} 1' 36''$  north.

The interval of time, between the beginning of the year 1760 and the beginning of the year before Christ 326, is 2085 Julian years; and, in this time, the retrogradation of the equinoctial points amounts to  $29^{\circ} 7' 55''$ .

Therefore, in the beginning of the year before Christ 326, the longitude of Lucida Pleiadum was  $\gamma 27^{\circ} 30' 39''$ , and the latitude  $4^{\circ} 1' 36''$  north.

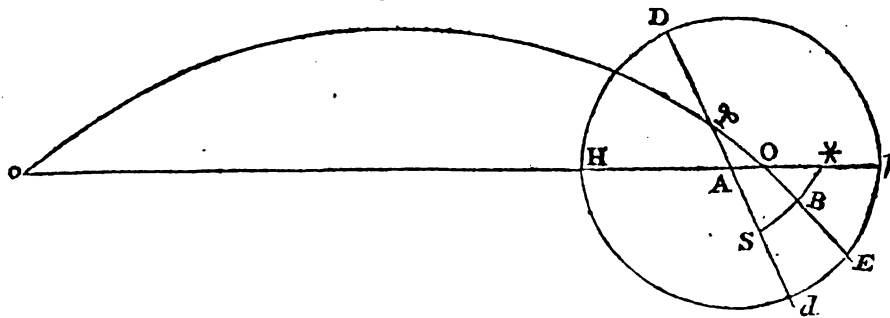
The obliquity of the ecliptic at this same time was  $23^{\circ} 44' 14''$ .

In the figure annexed, let  $Il Ah$ ,  $DA d$ ,  $\gamma OE$ , represent the horizon, the equinoctial circle and the ecliptic, all projected upon the plane of the meridian of the mouth of the Indus, at the instant when Lucida Pleiadum is rising. Let the ecliptic intersect the horizon, on the eastern side in  $O$ ; and on the western, in  $o$ . Let  $*$  be Lucida Pleiadum upon the eastern horizon; then  $O$  will be the point of the ecliptic, which comes

to the eastern horizon, and rises with the star; and the opposite point in the west, *o*, will be the point of the ecliptic, which sets when the star rises.

Through  $\ast$  draw a great circle of latitude  $\ast B S$ , meeting the ecliptic in *B*, and the equinoctial in *S*. Then, in the spherical

Fig 1.



triangle  $\gamma B S$ , we have the angle at *B* right.  $B \gamma S$ , the obliquity of the ecliptic,  $= 23^\circ 44' 14''$ ; the side  $\gamma B$ , the longitude of Lucida Pleiadum,  $= 27^\circ 30' 39''$ . Therefore, by the resolution of the triangle, we find the angle  $B S \gamma = 69^\circ 4' 57''$ , and the side  $B S = 11^\circ 28' 56''$ .

But the arc  $\ast B$  is the latitude of Lucida Pleiadum,  $= 4^\circ 1' 36''$ ; and  $\ast S = \ast B + B S = 15^\circ 30' 32''$ . Therefore, in the spherical triangle  $\ast S A$ , we have the side  $\ast S = 15^\circ 30' 32''$ ; the angle  $\ast S A$  (or  $B S \gamma$ )  $= 69^\circ 4' 57''$ , and the angle  $\ast A S$ , the complement of the latitude of the place,  $= 66^\circ$ . Therefore, by the resolution of the triangle, we find the angle  $S \ast A = 43^\circ 24' 29''$ .

Before we proceed further in the calculation it is proper to observe, to save unnecessary trouble, that it will not serve our

purpose to ascertain the longitudes of the points  $O$  and  $o$ , which the resolution of one triangle more would give. But the longitude of the point  $o$ , which sets when the star really comes to the horizon, would give us only the day, which *would* be the day of the acronychal rising of Lucida Pleiadum, if the atmosphere possessed no refractive power. But when the star is really upon the eastern horizon, it appears, by the effect of the refraction of the atmosphere, at the height of about half a degree above it. And if the sun at the same time were setting upon the western horizon, he would appear, from the same cause, at the height of about half a degree above it; so that on the day when the sun is really upon the western horizon, at the same instant when the star is really upon the eastern, the star by the effect of refraction will have risen, and the sun will not be set. What we want to find is the day when the star would be *seen* rising, and the sun *seen* setting at the same instant, if the star could be seen in the light of the setting sun; which will be an earlier day, than that whereon the rising star and setting sun would come to the eastern and western horizon respectively at the same time. To determine this day of the visible acronychal rising of the star, we must estimate the effect of refraction both upon the star and upon the sun. The effect of refraction upon the star will easily be ascertained by means of the angle  $S * A$ , the quantity of which we have already determined; and this is the only use of the calculation, so far as we have yet carried it.

In figure 2, let  $O *$ ,  $O B$ ,  $* B$ , represent the same arcs of the horizon, ecliptic, and circle of latitude passing through the star, as in the former figure.

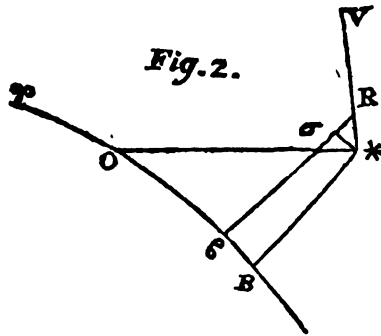


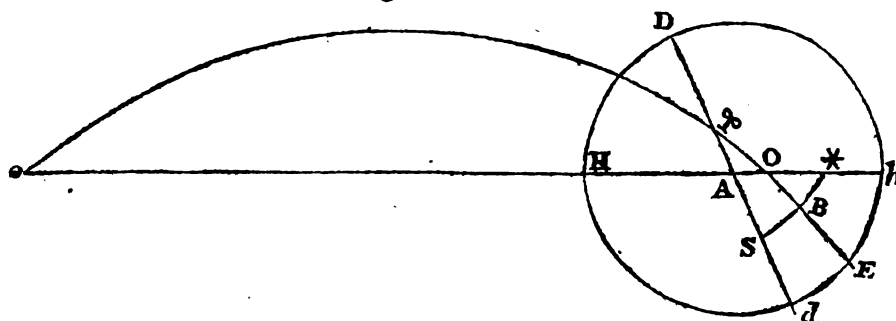
Fig. 2.

Through \* draw a vertical circle \* V, and set off an arc \* R = to the horizontal refraction, *i.e.* =  $30' 51''$ . Through R draw a great circle of latitude, meeting the ecliptic in  $\epsilon$ ; and through \* draw a small circle parallel to the ecliptic, and let this small circle meet the great circle of latitude, drawn through R, in  $\sigma$ .

Now since the light of the rising star upon the horizon is thrown, by the effect of refraction, up to R, in the vertical circle, so as to appear in the heavens in the point R; the star, which, without refraction, would be seen, where it really is, at the point \* in the circle of latitude \* B, appears at the point R in the circle of latitude R  $\epsilon$ . Both the latitude and longitude, therefore, of the star are changed in appearance by refraction; the latitude being increased by the quantity of the arc R  $\sigma$ , and the longitude diminished by B  $\epsilon$ .

In the triangle \* R  $\sigma$ , right-angled at  $\sigma$ , which for the smallness of its sides may be treated as a rectilinear triangle, the side \* R =  $30' 51''$ ; the angle R \*  $\sigma$ , which with  $\sigma$  \* o, makes a right angle, must be equal to 'O \* B (A \* S of Figure 1.), which with the same  $\sigma$  \* o makes a right angle; therefore, R \*  $\sigma$  =  $43^\circ 24' 29''$ . Therefore, by the resolution of the triangle, the side R  $\sigma$  =  $21' 12''$ , and the side \*  $\sigma$  =  $22' 24''$ . This is the length of \*  $\sigma$  in parts of a great circle; whence B  $\epsilon$  will be found  $22' 28''$ . Hence R  $\epsilon$ , the apparent latitude of the refracted star, = R  $\sigma$  +  $\sigma \epsilon$  =  $4^\circ 22' 48''$ , and  $\gamma \epsilon$ , its apparent longitude, =  $\gamma B$  - B  $\epsilon$  =  $\gamma 27^\circ 8' 11''$ .

Fig. 1.



Now then, in Figure 1, we must resume the resolution of the triangles, making use of the star's apparent longitude and latitude, instead of the true. Thus in the spherical  $\triangle B S$ , which is right-angled at B, put  $\angle B = 27^{\circ} 8' 11''$ ; the angle  $\angle B S$ ,  $23^{\circ} 44' 14''$  as before. Then, by the resolution of the triangle, the angle  $\angle B S = 69^{\circ} 0' 30''$ , and the side  $B S = 11^{\circ} 20' 29''$ .

But  $\angle B$  is to be taken as the star's refracted latitude  $= 4^{\circ} 22' 48''$ ; and  $\angle S = S B + B S = 15^{\circ} 43' 17''$ . Therefore, in the spherical triangle  $\triangle S A$ , we have the side  $\angle S = 15^{\circ} 43' 17''$ ; the angle  $\angle S A = 69^{\circ} 0' 30''$ ; and the angle  $\angle A S$ , the complement of the latitude of the place,  $= 66^{\circ}$ . Therefore, resolving the triangle, we find the angle  $\angle S A = 43^{\circ} 29' 34''$ .

Then in the spherical triangle  $\triangle B o$ , which is right-angled at B, we have the angle  $\angle B o (S A) = 43^{\circ} 29' 34''$ ; and the side  $\angle B$ , the star's refracted latitude,  $= 4^{\circ} 22' 48''$ . Whence, resolving the triangle, we find the side  $O B = 4^{\circ} 8' 39''$ .

Now  $\angle B$ , the apparent longitude of the refracted star,  $= 27^{\circ} 8' 11''$ ; and we have found  $O B = 4^{\circ} 8' 39''$ . Therefore,  $\angle O = \angle B - O B = 22^{\circ} 59' 32''$ ; and this is the longitude of that point of the ecliptic, which comes to the eastern horizon, at the same instant of time, with the refracted light of the star.

The point o opposite to this, which comes to the western horizon, at the same instant of time, when the refracted light of the star is upon the eastern horizon, is  $\angle 22^{\circ} 59' 32''$ .

But if this were the true place of the sun, when the refracted star is upon the eastern horizon; the sun would not yet be set, but would appear, by the effect of refraction, about half a degree above the horizon. We must inquire, what the sun's true place must be, in order that the horizontal refraction may throw his light into the point  $o$ ; for the time when this happens will be the true acronychal rising. And for this purpose we must estimate the effect of the horizontal refraction upon the sun's apparent longitude; and this depends upon the angle which the ecliptic, at sun-rise or sun-set, makes with the horizon; that is upon the angle  $\gamma O A$  (Figure 1.) or its equal  $* O B$ .

The angle  $* O B$  is easily found, by resolving the spherical triangle  $* O B$ , in which the angle at  $B$  is a right angle; the angle  $B * O = 43^\circ 29' 34''$ , and the side  $* B = 4^\circ 22' 48''$ . Hence the angle  $* O B$  comes out  $46^\circ 39' 57''$ .

Now, to avoid confusion, draw the spherical triangle  $O * B$  by itself in Figure 3. Through  $O$  draw a vertical circle  $O V$ ,

and take the arc  $OR =$  horizontal refraction  $= 30' 51''$ . Through  $R$  draw a great circle of latitude, and let it meet the ecliptic in the point  $\omega$ .

Then, if the sun be upon the horizon at  $O$ , the horizontal refraction will throw his light up to  $R$ , and in that point he will appear in the heavens. He will appear

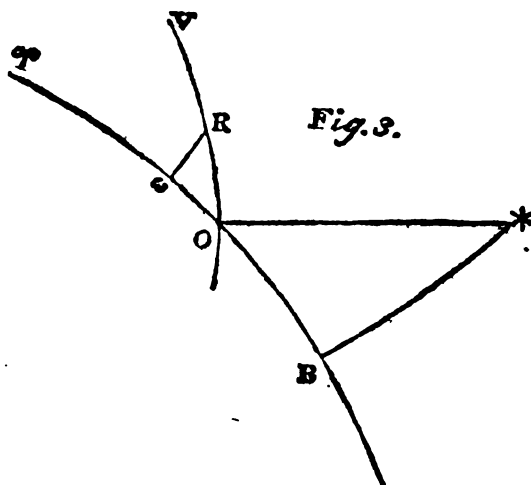


Fig. 3.



at R upon the circle of latitude R  $\omega$ ;  $\omega$  will be his apparent place in the ecliptic; and the arc of the ecliptic, O  $\omega$ , will be the difference between his true and his apparent place; or the effect of the horizontal refraction upon his apparent longitude.

In the triangle R o  $\omega$ , which, for the smallness of its sides, may be treated as a rectilinear triangle, the angle at  $\omega$  is a right angle. The angle R O  $\omega$ , being the complement of  $\angle$  O B, is  $43^{\circ} 20' 3''$ . Hence O  $\omega$  comes out  $22' 26''$ ; and this, as has been said, is the effect of the horizontal refraction upon the rising sun's apparent longitude, his true place being O, in the latitude of  $24^{\circ}$  north. And the same will be the quantity of the effect upon the setting sun, in the opposite point of the ecliptic o, in the same latitude; for the quantity of the effect in any given latitude, upon the rising sun, in any given point of the ecliptic, and of the effect upon the setting sun in the opposite point of the ecliptic, will be the same; the angle which the ecliptic in opposite points makes with the horizon, upon which the effect depends, being equal: but the effect lies, in the two cases, in opposite directions; the refraction making the apparent longitude of the rising sun west of his true place, and the apparent longitude of the setting sun east of his true place.

Hence, that refraction might throw the light of the sun to the point o in the western horizon, at the same instant of time when refraction brought the light of Lucida Pleiadum to the eastern horizon, in the climate in question, we must put the sun's true place  $22' 26''$  west of the point o.

The point o has been found to be  $\approx 22^{\circ} 59' 32''$ ; therefore the sun's true place, in order that the required effect should be produced, must have been  $\approx 22^{\circ} 37' 6''$ . By an accurate calculation of the motions of the sun, (by Mayer's Tables,) I find that, in the year before Christ 326, he came to this place October 19,

10<sup>h</sup> 25' 9" St. Jul. mean time under the meridian of Greenwich: but to this, to be exact, we must apply a correction for the effect of the precession upon the longitude of Lucida Pleiadum, in the interval between the commencement of the year and October 19th, (since the sun's place is deduced from the longitude of the star,) + 16"; add also 4' 36", for the difference between the meridians of Greenwich and the mouth of the Indus, and we have October 19th, 15<sup>h</sup> 17' mean time under the meridian of the mouth of the Indus.

The 19th of October (St. Jul.) therefore was the day of the acronychal rising of Lucida Pleiadum, upon the horizon of the mouth of the Indus, in the year before Christ 326, *i. e.* in the year of the Julian period 4388.

It may perhaps strike you as a difficulty, that the time that our calculation gives for the appulse of the sun to the required place, falling between three and four o'clock in the morning of the 20th, under the meridian of the mouth of the Indus, the sun was actually set on the 19th many hours before he came to that point of the ecliptic, which would have made a precise acronychal rising of the star, had the instant of the sun's appulse, in his annual course, to that point coincided with the instant of sunset: but this not being the case, you may wonder how we can say there was an acronychal rising at all.

Now this is really the fact; that, speaking with geometrical precision, there was in this year no day of an exact acronychal rising of Lucida Pleiadum; and it very seldom happens, that there is an exact acronychal rising of any star at any place, if we insist upon this strict sense of the words; because it very seldom happens, that the instant of the sun's appulse to the required point in the ecliptic, and the instant of sunset, are the

same. They may differ several hours ; and the same thing happens in the cosmical and heliacal risings and settings ; nevertheless, there will always be a day, when the rising will be nearer to acronychal, than in any other. And this, physically speaking, is the day of the acronychal rising ; and, in our case, the 19th was that day ; for on the 19th the sun, at the hour of sunset, was  $24^{\circ} 45'$  of longitude behind the required place. On the 20th, at the hour of sunset, he was  $35^{\circ} 58''$  before it ; so that the setting sun was much nearer to the required place on the 19th than the 20th.

I fear you will find the accuracy, with which I have pursued these calculations, tedious ; but I have chosen to give them in detail, that they may be the more easily examined. I have been diffuse upon the refractions, because the effect of refraction upon the longitude and latitude of celestial objects, though a matter of no difficulty to mathematicians, is not generally understood ; and yet is very intelligible, if those who are masters of it would take the trouble to explain it.

The 19th of October (St. Jul.) you see was the day of the acronychal rising of Lucida Pleiadum at the mouth of the Indus, in the year of our voyage. The voyage commenced, according to Arrian, on the 20th of Boëdromion (for that he gives as the very day on which the fleet sailed), and the 20th of Boëdromion in that year, you reckon, with Dodwell, the 1st of October ; and in this reckoning there can be no material error.

I have never examined Dodwell's Tables of the Metonic Cycles. I make use of a very compendious Table of my own, by which I can, in a very few minutes, ascertain, on what day of the Julian year the 1st of Hecatombæon, in any given year

of any given Metonic Cycle, fell, according to the principles upon which my Table is formed. And the 1st of Hecatombæon, *i. e.* the beginning of the year, being once determined, the whole year is easily reduced to the Julian reckoning, by a general Table of the Cycle. In the principles upon which my Table is formed, I agree not entirely either with Scaliger or Petavius. In the order of the months, I agree with Scaliger. I agree with Scaliger in the epoch of the first Cycle; placing it on the 15th of July, not on the 16th with Petavius. I place the Embolimæan month in the 3d, 6th, 9th, 11th, 14th, 17th, and 19th years of the Cycle: in which I agree entirely with Petavius, except in the third Embolism, which he (with Scaliger and Dodwell) places on the 8th year of the Cycle. I put it in the 9th; dissenting, I confess, in this from every one. In the arrangement of the exæresimal days, I follow the very best authority I know, that of the learned astronomer Gemînus.

Now the year of the voyage in question was the year of the Julian period 4388; it was therefore the 107th Metonic year; that is, the 12th year of the 6th Cycle. That is to say, five Cycles were completely run out, since the first introduction of this 19-year period, and the 12th year of the 6th Cycle was in its course. And I find by my own Tables, that the 1st of Hecatombæon, in the 12th year of the 6th Cycle, fell on the 15th of July (St. Jul.). Add 29 days (for the Hecatombæon of this year was a hollow month), and we come to the 1st of Metageitnion, on the 13th of August. Add 30 days (for Metageitnion of this year was a full month), and we come to the 1st of Boëdromion, on the 12th of September. The 12th of September being the 1st of Boëdromion, the 1st of October ought to be the 20th of Boëdromion. But Boëdromion in this year

was a hollow month, and the exæresimal day came before the 20th, being the 18th; therefore the 30th of September was the day which, according to my principles, was counted the 20th of Boëdromion in this year.

By Scaliger's principles, the 20th of this Boëdromion will fall on the very same day, the 30th of September. By Petavius's, one day later, namely on the 1st of October.

It is certain, therefore, that on one of these two days, either the 30th of September or the 1st of October, Nearchus sailed from the mouth of the Indus, according to Arrian; consequently, he had been eighteen or nineteen days at sea, before the day came of the acronychal rising of Lucida Pleiadum; taking acronychal rising strictly, according to the mathematical definition of the terms. It is true, that Strabo's words import not that the fleet sailed on the very day, but at the season only, of the acronychal rising of the Pleiades; but yet eighteen or nineteen days seemed too great a difference to admit even this lax description of the time. I was at first, therefore, inclined to suspect an error in the name of the month in Arrian; and I tried a conjectural emendation; but the severe test of a strict calculation compelled me to discard it.

After various conjectures, and many long calculations, I am entirely persuaded, that Mr. Wales's very ingenious conjecture, by which he reconciles his calculation of the acronychal rising of the Pleiades at Rome, in the year of our Lord 42, with Columella's date, is the only solution, and the true solution of the difficulty. The perfect agreement that it will produce between Arrian and Strabo, in the time of Nearchus's sailing, is indeed astonishing.

Mr. Wales observes, that the exact acronychal rising of a star is never visible, on account of the sun's light; but it is equally true, that the rising of the star for several evenings before the day of the acronychal rising will not be visible: for the sun must not only be set, but he must be set and sunk to a certain distance below the horizon, for the twilight to be sufficiently faint to allow the fixed stars to appear. Suppose then, that on a certain day, no matter what, the sun is sunk somewhat below that distance, when a particular star is upon the eastern horizon; on that evening, if the sky be clear, the rising of the star may be observed. Suppose, that the next night the sun is not sunk quite to the required distance, when the same star is upon the eastern horizon: then the rising of the star will not be visible; and when the star becomes visible, it will be seen at some small distance above the horizon: the next night, it will be at a greater height above the horizon, when it is first seen; the third, a greater still; and, on the evening of true acronychal rising, the star will have gained a very considerable height, when it is first seen. It certainly was very natural (and it was the only way for popular use) for the ancients to call that the evening of the acronychal rising, on which they first missed the sight of the rising star.

The distance below the horizon, to which the sun must be sunk when a star first becomes visible, is different according to the magnitude of the star. *Lucida Pleiadum* is a star of the third magnitude; and Ptolemy says, that stars of the third magnitude first become visible when the sun is sunk  $14^{\circ}$  below the horizon. Now I find by calculation, that in the year of the Voyage (of the Julian period 4388), when the sun was  $14^{\circ}$  below the western horizon, at the same instant of time when Lu-

Lucida Pleiadum came to the eastern horizon, his true place must have been  $\alpha 3^{\circ} 33' 56''$ ; and he came to this place in that year, September 30,  $12^{\text{h}} 59'$  (St Jul.) mean time under the meridian of Greenwich. Apply, as before, the proper correction for the effect of the precession upon the longitude of Lucida Pleiadum, namely  $+ 15'$ , and we have September 30,  $13^{\text{h}} 14'$  mean time under the meridian of Greenwich. Add  $4^{\text{h}} 36'$ , and we have September 30,  $17^{\text{h}} 50'$  mean time under the meridian of the mouth of the Indus; which, as we in our civil reckoning divide the day, was 10' before six in the morning of the 1st of October.

On the evening, therefore, of the 30th of September, the sun (setting in that latitude about  $5^{\text{h}} 57' 26''$ , apparent time after noon) would be many minutes more than  $14^{\circ}$  below the horizon, when Lucida Pleiadum was rising. The rising of the star, therefore, that evening might be seen a minute or two later than  $1^{\text{h}} 0' 24''$  after sunset; but the next evening, the 1st of October, the sun would be only  $13^{\circ} 37' 15''$  below the horizon, when the star was rising, wanting  $22' 45''$  of the full depression of  $14^{\circ}$ . This evening, therefore, the star could not be seen upon the horizon. But as the sun sunk at the rate of  $13' 40''$  in 1' of time, he would sink to the limit of  $14^{\circ}$  in  $1' 40''$  of time after the instant of the star's rising: and as the star rises in the latitude of  $24^{\circ}$  north, at the rate of  $13' 11''$  in 1' of time, the star,  $1^{\text{h}} 0' 24''$  after sunset, and  $1' 40''$  after the moment of its own rising, would break through the expiring twilight with the apparent altitude of  $21' 58''$  (I say with the *apparent* altitude, for the effect of refraction upon the star is included in these calculations). This altitude is very sensible to the naked eye, being scarce less than  $\frac{1}{2}$  of the whole diameter of the sun: but the

next evening (Oct. 2d) would certainly put the matter out of doubt; for, on the 2d of October, the star, at the same distance of time after sunset, would break through the remains of the twilight, with the very sensible altitude of  $1^{\circ} 2' 48''$  at the moment of its first apparition. Whence our mariners would conclude, that the sensible acronychism was past. It appears, therefore, that what these mariners would call the acronychal rising of the Pleiades, took place either on the very day the fleet sailed, or the next, or, at the latest, the next day but one.

Thus, by a train of calculations of considerable length and labour, but of the greatest certainty, and pursued with the most scrupulous accuracy, by the help of Mr. Wales's suggestion, the ingenuity of which I cannot sufficiently admire, we have brought the two accounts of Strabo and Arrian to a perfect good agreement.

I congratulate you and myself upon the success of the investigation, and remain,

DEAR SIR,

Your very faithful friend

and obedient servant,

S. ROCHESTER.

DEANERY,  
June 6, 1796.

P. S. You will perhaps suspect that I have committed a mistake in the very entrance upon these calculations, by reckoning the interval between the commencement of the year before our Lord 326 and the commencement of the year of our Lord 1760, no more than 2085 Julian years, whereas you may think it was 2086. The truth however is, that, through carelessness, I fell



into the opposite mistake ; I reckoned the interval 2086 Julian years instead of 2085 ; and, by this inadvertency, I gave myself the trouble of going through the whole calculation from beginning to end a second time, and of correcting all my numbers ; though the error accruing from this over-reckoning of that interval, might well have been neglected in this investigation.

To understand how it is that the lesser is the true interval, you must know that it is the uniform error of chronologers, reckoning by the æra of our Lord, to reckon the years before our Lord, too many by one. The year which chronologers call the year before Christ 326, was the year of the Julian period 4388, as you may see by turning to Blair's Tables, Petavius, or Usher. The year of our Lord 1760 was the year of the Julian period 6473 ; the interval, therefore, is 2085 Julian years. The reckoning by the æra of our Lord, when we have to do with time antecedent to the æra, is seldom conducted with precision but in astronomical tables. If you turn to Mayer's Tables, you will find there, in the first page of the Epochs of the Sun's Motions (p. 6.), and again in the first page of the Moon's Epochs (p. 36.), a year of Christ, 0 ; and it appears by the epochs ascribed to this year of Christ, 0, that it is the year of the Julian period 4713. Now, the year of the Julian period 4713, chronologers call, as you will see again by their tables, the year *before* Christ 1 ; at the same time they call the next succeeding year of the Julian period, *viz.* 4714, the year *after* Christ 1 ; and by this inaccuracy of their language, they in effect represent the interval between any numerical day of the year 4713 of the period (the 1st of March for instance) and the same numerical day of the very next year of the period, as consisting of two whole years instead of one.

Since I finished my calculations I have, almost accidentally, met with what I deem a strong confirmation of the accuracy of the conclusion to which they have brought us. In Archbishop Usher's Ephemeris of the Macedonian year, I find this entry against the 8th day of the month Dios. "*Euctemoni vespertina*" "*apparent Pleiades*." The 8th of the month Dios, according to Usher's reduction of the Macedonian year, was the 1st of October (St. Jul.) Euctemon the astronomer is mentioned by Ptolemy as Meton's assistant, in the observation of the summer solstice. He flourished, therefore, in Greece, about a century earlier than the time of this expedition.

I imagine that Archbishop Usher took this date of Euctemon's evening rising of the Pleiades from Gemínus, reducing Gemínus's date to the Macedonian year; for in Gemínus's *parapectn*, which he gives in the 16th chapter of his *Isagógè*, I find this entry:

Τὸν δὲ ζυγὸν διαπορεύεται ὁ ἥλιος ἐν ἡμέραις λ.

And a few lines lower,

Ἐν δὲ τῇ Ε Εὐκλήμονι Πλειάδες ἰσπείρια φαίνονται ἐκ τῆ πρὸς ἑω.

The numeral E denotes the 5th day of the sun in Libra. The sun entered Libra, according to Euctemon and Meton, September 27th; his 5th day in Libra, therefore, was October 1, the 8th of Usher's Dios.

On the 5th day of the sun's passage through the sign of Libra, he was in the 5th degree of Libra according to the mean motions; and the prosthaphæresis at this time being  $1^{\circ} 38'$ , with the negative sign, his true place was in the third degree of Libra. And this again agrees wonderfully with my calculations.

Had you had the ill luck to consult Usher's Ephemeris, or Geminus's, instead of Columella, you would not have proposed this question to Wales or me; for you would have taken it for granted, that Strabo and Arrian agreed. Had either he, or I, consulted them before we calculated, we perhaps should not have engaged in the labour of these calculations. We should have advised you to follow Euctémon without regard to Columella describing the phænomena of another climate in another age; but then we should not have discovered what Wales has conjectured, and my calculations, I think, put out of doubt; that when the ancients speak of acronychal risings, they are to be understood of the sensible acronychism: and this is a principle which may prevent many mistakes in deducing conclusions in chronology from these astronomical characters of time which the ancients used.

NOTE on the small STADIUM of ARISTOTLE, p. 51.

*By the Right Rev. Dr. HORSLEY, Lord Bishop of Rochester,  
since Bishop of St. Asaph.*

CIRCUMFERENCE of the earth, according to Eratosthenes,  
= 252,000 stadia; Aristotle, = 400,000 stadia; therefore,  
Aristotle's stadium to the stadium of Eratosthenes as 252 to 400,  
that is, as 5 to 8 very nearly. This is a much more exact pro-  
portion than that of 4 to 7; for the proportion of 4 to 7 makes  
Eratosthenes's stadium too large by almost  $\frac{1}{7}$ ; whereas the pro-  
portion of 5 to 8 makes it too large by no more than  $\frac{1}{16}$ .

Proportion of Roman foot to London foot 97 : 100 : hence  
Roman foot = 11,64 inches; passus (5 feet) = 4 feet 10,2 inches,  
London measure; milliare (1000 passus) = 7 furlongs 76 yards  
2 feet, or 4850 feet London measure.

Call the Roman passus P, milliare M, Olympic stadium  $\Sigma$ .

Now (by Polybius as quoted by Strabo)  $M = 8 \Sigma + \frac{1}{3} \Sigma$ .

Hence  $125 P (= \frac{1}{3} M) = \Sigma + \frac{1}{16} \Sigma = \frac{17}{16} \Sigma$ .

Hence  $5 P = \frac{1}{4} \Sigma$ ; and  $120 P = \Sigma$ .

Hence  $\Sigma$ , or Olympic stadium, = 582 feet London, or 194 yards.

or Olympic stadium, = 0,110227'27' miles London.

$8 : 5 = 0,110227'27' : 0,0688920'45'45'$ .

Hence Aristotle's stadium = 0,068892045'45' miles London.

	Aristotle's Stadium.	Miles London.
Hence from Jamad to Mouth of Indus,	= 10000	= 689
Coast of Arabítæ,	= 1000	= 68,9
Orítæ,	= 1600	= 110,24
Ichthyóphagi,	= 10000	= 689
Karmania,	= 3700	= 254,93
Persis,	= 4700	= 323,83
Total,	31000	= 2135,90

Hence, by reduction of the Greek measures, the whole distance should be 2135,9 miles London; which, however, if the decimals had been more exactly computed, would have been 2135,63 miles London: for  $0,068892 \times 31000 = 2135,652$ , the actual measurement by the moderns, gives 1908 miles; the difference is 227,65 miles London, or  $\frac{1}{4}$ ths of the whole distance.

But if 8 Olympic stadia were exactly a Roman mile, and Polybius's addition of  $\frac{1}{4}$  of a stadium was an error of his, arising from the difference between the Roman and the Olympic foot; then 1 Olympic stadium was 606,25 feet London, or 0,1147774 miles London, and Aristotle's stadium will be 0,0717359 miles London, and the whole distance will be  $0,0717359 \times 31000 = 2223,8$  miles London, which makes the difference between the ancient and modern measures still greater; and this makes it probable that Polybius's estimation of the stadium was right.

It is to be remarked by the way, that if this estimation was right, the opinion which has so generally and so long prevailed of a difference between the Greek and the Roman foot, making the former greater than the latter, in the proportion of 25 to 24,

must be erroneous. It seems to have been current among the Romans themselves, but it must have been founded on a gross estimation of the length of the Olympic stadium. The Romans, in their popular valuation of the Greek measures, would be apt to reckon eight Olympic stadia to be exactly equal to their own mile, taking no account of the fraction mentioned by Polybius. Hence they would infer, that the Olympic stadium was 125 Roman passus, *i. e.* 625 Roman feet, which is, indeed, the length expressly assigned to it by Pliny. But it was very well known, that this stadium was but 600 of its own feet. It was concluded, therefore, that 600 Greek feet make 625 Roman, whence the consequence would be, that the Greek foot was to the Roman as 625 to 600, that is, as 25 to 24. But if the Roman mile actually was, what Polybius reckons it,  $\frac{1}{4}$  of a stadium more than eight stadia, the length of the stadium turns out exactly 120 Roman passus, or 600 Roman feet. And since it was also 600 Greek feet, the Greek and the Roman foot must have been the very same.

N. B. THIS Note on the Stadium was not intended for publication by Bishop Horsey, but was sent to the press by mistake with the Dissertation. The author did not adopt the correction it contains; but as the deduction has been questioned by the translator of the *Periplus of the Euxine Sea*, it has been thought right not to suppress it, as the framer of it is, alas! no more. Had he been alive, he had candour sufficient to admit a different opinion, if he had been mistaken; and ability to defend his own, if right. The author was infinitely indebted to the Bishop for his approbation and encouragement, and more especially for a copy of *Nearchus* with his own corrections, which are almost universally adopted in the present edition. The attention shewn to both these works by a man of his Lordship's consummate erudition, the author always considered as the most grateful recompence of his labour.

The maps of Ptolemy, constructed upon the principle of his short degree, have given the Mediterranean an extent of about  $20^{\circ}$  of longitude more than it ought to have, when in reality the author has not exceeded the true length by  $4^{\circ}$ , or thereabout. This enormous disfiguration was followed and improved during 14 centuries. At last, the learned Gassendi (in the middle of the last century) wrote against such an absurdity; and, some years after, Guillaume de Lisle gave us a Mediterranean only 860 leagues long instead of 1160, which that sea had always before that remarkable æra.

## NOTE, p. 481.

AFTER the impression of this work was completed, I obtained from Mr. Arrow-smith a map of Susiana, in which, by a variety of geographical combinations, he had found it necessary to compress the respective distances between Terêdon and the A'rosis, as well as between Terêdon and the Gaban channel: the former he reduced to 75 nautical miles, and the latter to 48, equal nearly to 96 and 58 Roman miles respectively. And as the distance from Terêdon to the A'rosis differs only three miles from McCluer, it may be concluded that the disagreement of authorities, stated p. 481. may be reduced to this standard. The consequence is, that the whole of the diminution which we gain on the distance from Terêdon to the Gaban channel, is so much advantage in favour of Nearchus, who calculates 2000 stadia, or 133 miles to the village at the confluence of the Pasitigris; and although this is still inaccurate, it is little more so than the distance between Terêdon and the A'rosis. Upon these measures, Nearchus himself acknowledges, that it was impossible to be exact, from the nature of the navigation; and, therefore, if we obtain an approximation to the truth, it is all that can be expected.

The map is inserted at p. 481.: it embraces all the different statements and contradictions of the ancient historians compared with the Oriental geographers, and rectified by the march of Timour. The course of the rivers from their sources, and their issues into the sea, may be depended on. Some allowance must be made for their intermediate direction, as there were no authorities, ancient or modern, to consult; but the latitude of the places by which they pass has been carefully attended to, and the line of their course laid down accordingly.—In consequence, it may be presumed that their accuracy is sufficient to answer the purpose of history, and that the whole has been arranged with as much precision as the scanty materials furnished to Mr. Arrowsmith permitted a geographer of his superior merit to attain.

END OF THE FIRST VOLUME.



# ERRATA.

P. 449. *Note*, line 17. for καὶ ἐν Στραυπόλ read καὶ ἐν Στραυπόλ.  
line 18. for μνήματα read μνήματα.

Strahan and Preston,  
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